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Plate I.

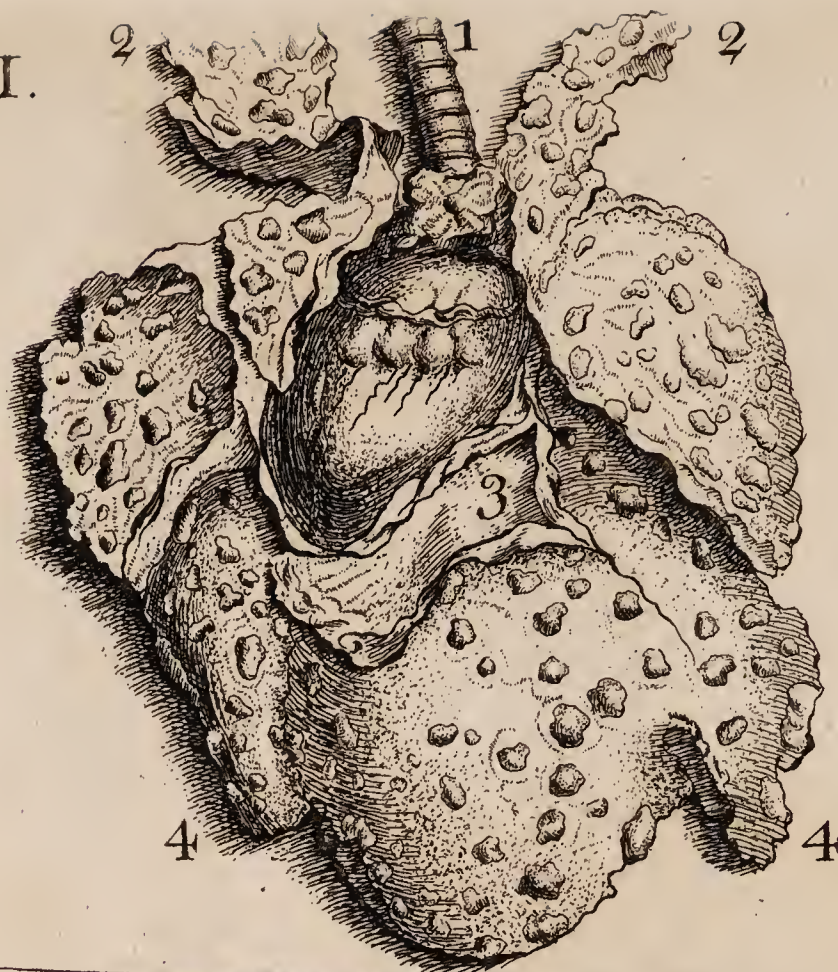


Plate II.



- Fig. 1. Part of the Windpipe.* —
Fig. 2. 2. Lobes of the Lungs. —
Fig. 3. The Heart, & part of the Diaphragm. —
Fig. 4. 4. The Liver full of Tumors,
partly distended with Pus, and partly
with Water. —

A
DISSERTATION
ON THE USE OF
SEA WATER
IN THE
DISEASES OF THE GLANDS;
PARTICULARLY THE
SCURVY, JAUNDICE, KING'S-EVIL, LEPROSY,
and the GLANDULAR CONSUMPTION.

TRANSLATED FROM THE LATIN OF
RICHARD RUSSEL, M. D.

TO WHICH IS ADDED, A TRANSLATION OF
Dr. SPEED's Commentary on SEA WATER.

A L S O
An Account of the NATURE, PROPERTIES, and USES
Of all the remarkable
MINERAL WATERS in GREAT BRITAIN;
A N D
Of the FOREIGN MINERAL WATERS
O F
PYRMONT, SPA, and SELTZER.

A NEW EDITION being the FIFTH, Corrected and
Improved.

L O N D O N:

Printed for W. OWEN, between the Temple Gates,
Fleet-Street.

M DCC LXIX.

42902

TO THE

ROYAL COLLEGE

OF

PHYSICIANS,

IN LONDON,

THE FOLLOWING

TREATISES

ARE, WITH ALL DUE DEFERENCE AND
RESPECT, INSCRIBED,

BY THEIR OBLIGED,

AND MOST OBEDIENT

HUMBLE SERVANT,

W. OWEN.

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TO THE

R E A D E R.

IN the last Edition of this Treatise, there was added to Dr. *Russel's* Account of Sea Water, Dr. *Speed's* Commentary on the same Subject; and to render this more compleat, and more generally useful, there is now subjoined a Relation of the Nature, Properties, Contents, Virtues, Doses, and Uses of all the noted mineral Waters, both *English* and *Foreign*. Here then every Patient may soon learn what medical Spring is best adapted to his particular Ailment, and where he is most likely to meet with a Cure. And perhaps it may save many an irksome Journey, and prevent unnecessary Expences, as well as hinder the Distemper from taking deeper Root by a tedious Delay. It must be owned that at all the much frequented Places, there are Physicians to be consulted, and consequently there will be no Danger of using any of those Waters incongruously; but then there are many others where no such Advice can be readily had; and if there could, it must certainly be most expedient to have some Knowledge beforehand of what Water is most likely to yield Relief. Add to this, that there are some

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who are not able to make long and chargeable Excursions for several successive Seasons, who, if they were acquainted with the great Care that is taken to have the Waters in their utmost Perfection, might meet with a certain Remedy, without the Expence and Fatigue of a long Journey.

We have consulted the Writings of several Physicians and natural Historians, to gain the best Information we are able, taking as much Care as possible not to mislead the Reader in any single Instance. We are greatly obliged to Dr. *Short*, whose Inquiries into this Part of Philosophy have received the Approbation of the Learned; as also to Dr. *Rutty*, who has not only given us a regular Synopsis of Mineral Waters, but has added a great Number of Experiments of his own. Upon these Accounts therefore it is believed these few Sheets will not be unacceptable to the Public in general, nor even to the young Practitioners in the Art of Medicine in particular; because they will hereby be assisted in forming their Judgment upon this Subject, even after they have read much larger Volumes: At least, it is hoped that these Observations will be thought no improper Addition to the two Discourses upon Sea Water, because they all coincide with the same Design, which is the curing of tedious chronic Diseases, and the restoring of lost Health.

T H E



T H E

P R E F A C E.

IN the following Treatise I offer to the READER'S Consideration a few Cases relating to such Maladies as have yielded to the Efficacy of SEA WATER, and have attempted to explain the Manner of its Operation in vanquishing the Diseases of the Glands. However, as so powerful a Medicine, in my Opinion, cannot fail of being of far more extensive Use, I promise myself the most accurate Enquiries will be made into its Nature; and that future Experiments will determine how much farther it will be beneficial to Mankind.

However, I think it proper to introduce this Work, by a few Observations that I and others have already made upon the Nature, constituent Parts, and Qualities of SEA WATER; for from hence, perhaps, a

just Judgment may be formed of what farther may be expected from its Assistance.

And as I have been assisted in these Enquires by the ingenious and curious Experiments of several very learned Men, as *Hales*, *Boerhaave*, *Sepius*, *Marsilius*, *Guidot*, and others, I thankfully acknowledge the Benefit I received from their Observations; and I shall be ungrateful, if I should not mention, with due Regard, my very learned Friends, and eminent Physicians, *R. Frewin*, *M. Lee*, *E. Wilmot*, and *W. Lewis*, at whose Requests, and by whose Advice and Assistance, I undertook and compleated this Work. But to come to the Purpose.

Water is of itself without Taste or Smell, and being sprinkled in the Eye, gives no Pain; but is smooth and flexible, and cannot offend the Nerves, in any Sense: Besides, it is a Kind of common Menstruum or Dissolvent of all Salts, and seems by Nature designed for that Purpose; for though the Crystals of Sea Salt are of a pyramidical Shape, of Sal Gem cubical, of Nitre prismatic, and Vitriol and Alum of different Forms; yet Water dissolves all their Particles, and receives them all in a Kind of common Menstruum. Hence it is so remarkably ready to dissolve the soapy
and

and gummous Particles of Bodies, and by the Influence of the Sun's Heat, it is made the chief Instrument in all chemical Extractions, both natural and artificial. But SEA WATER abounds chiefly with Salt, as may be observed by those who, in making Salt, boil it up to such a Consistence as will bear the Weight of an Egg.

That vast Collection of Waters, which we call the Sea, furrounds the whole Earth, and consequently washes whatever is contained between its opposite Shores, as Submarine Plants, Salts, Fishes, Minerals, &c. and is therefore enriched with the Particles it receives from these Bodies, either being washed off, or passing into the Water by their Transpiration; for their fine and subtile Particles, continually thrown off by Transpiration, and endeavouring to escape into the Air, are intercepted by the Water, and mingled with it. But Salts chiefly bestow their Particles on the Water, and thereby preserve it from Putrefaction; from this Cause also, this Fluid acquires a more oily and soapy Quality than Spring Water: And further, this whole Body of Water is penetrated by certain sulphureous Steams or Effluvia.

All these Causes seem jointly to constitute this Fluid which we call the Sea, and
which

into SEA WATER not well distilled, the astringent Power of the Water was so great, that contracting the minute Blood-Vessels, no Blood would flow therefrom:

The next Quality is *Bitterness*, which it is supposed to acquire from the bituminous Parts of the subjacent Earth: for it is probable that sulphureous Exhalations are expelled thro' innumerable Passages by subterranean Fires, which impregnate the SEA WATER, as the Fume of Sulphur penetrates Wine: Wherefore, it is very probable that SEA WATER is the more bitter the deeper it is taken. And this sulphureous Bitumen ascends so plentifully in Distillation, that *Marfilinus* affirms, that the distilled SEA WATER cannot be drunk, for its Quantity of Bitumen, which is more nauseous than its Saltness: and he also says, that there is so great a Quantity of Bitumen in the *Mediterranean* and *Thracian* Seas, and more especially in the *Pacific Ocean*, as also that which washes the *East-India* Shores, that it sometimes appears floating upon the Surface of the Water; and he judges it proceeds partly from the Veins of Coals, and partly from a Kind of Petroleum, which is found in various Parts of the Earth. The same Author distilled some Pit-Coal, and found, that forty Grains of the volatile oleous Spirit of Coals, put into two Pints
of

of Spring Water, that was made as salt as Sea Water, caused it to be as bitter as the Water at the Surface of the Sea ; and fifty Grains made it as bitter as the deeper Sea Water. And perhaps these bituminous and sulphureous Particles considerably assist the Salt in dispersing Tumours ; for Physicians have always esteemed Bitumen to be a dissolving Medicine, consisting of volatile Salt, Sulphur, and a little Earth.

“ For all bituminous Bodies have a Power
“ of heating and discussing ; whence hot
“ Baths and medicinal Springs that contain
“ Sulphur and Bitumen are used with
“ Success to disperse cold Humours in the
“ Palsy, Epilepsy, and the like Distem-
“ pers.” *See Epitom. Physicæ Sannert. p. 52.*

Therefore, from these Reasons we may judge, that the Bitterness of Sea Water proceeds from a certain volatile oleous Spirit, with which it is remarkably impregnated, the Quality of which can only be discovered by the Effects.

The third Quality is *Nitrosity*. Dr. Hales found by several Experiments, that the bitter Salt, of which there is such a large Quantity in Sea Water, was partly nitrous ; and does not think it strange that such a nitrous Salt should be formed in the bitter Salt, and in the oleous Bitumen of the Sea.

He

He also thinks, that this bitter Salt abounds in Plants and Animals ; and that the Sea Water does not only contain a perfect Sea Salt, but also an imperfect bitter Salt, and a Kind of sulphureous Bitumen. And also is of Opinion, that the subtle Sulphur which abounds in the Air, Dew, and Rain, &c. is extracted from that sulphureous Bitumen, by the Heat of the Sun, and promotes the Vegetation of the Fruits of the Earth. It has also been observed, that Sea Water does not extinguish Fire so readily as Spring or fresh Water ; and this is supposed to proceed from the nitrous Particles abounding in Sea Water ; for Nitre consists of a saline, volatile, oleous Matter : add to this, that the Sea Water abounds with many bituminous and sulphureous Particles, if it be true, which some affirm, that it will not readily extinguish Fire ; and therefore, *Lamps burn better with Salt in the Oil.* Macrobi. Saturnal. Lib. 7. Whence also *Plutarch*, in the Beginning of his Book of *Natural Questions*, cites a Proverb used by the Antients, *Do not throw Sea Water upon the Fire*, on Account of its Oiliness ; as he writes in the same Place.

Its last Quality is *Oiliness* : for besides other Things, *Marsilius* observes, that there is an Oiliness or soapy Quality in distilled Sea Water ; and he says, that two Pounds
of

of distilled Sea Water will not dissolve so much Salt as the same Quantity of Spring Water, by half a Dram, although their specific Gravities are equal, and he attributes this to its Oilyness. The Antients also observed this Oilyness of Sea Water. “ *There is a surprizing Oilyness in Sea Water.*” Pliny *lib. xxxi. cap. 7.* and Father Bourzes affirms, that he observed in some Parts of the Ocean such a remarkable Oilyness, that if a Cloth was dipped in it, it acquired a Viscidity; and where the Way of the Ship made a brighter Track in the Water, there it was more greasy and viscid; and the Cloth being shook with a quick Motion, gave a great Light. See the 9th Vol. of *Lettres des R. P. Missionnaires, Edit. Paris, Octavo.* And indeed, that Viscidity or Oilyness is so evident, that Dr. Hales, by several accurate Distillations, found that Sea Water, though deprived of its Salt, did yet retain a certain viscid Matter, which stuck to the Sides of the Vessel, if the Water was disturbed, but sunk to the Bottom, if it remained without Motion. This Oilyness, which is not found in Spring Water, appears also in Salt; for if the cleanest common Salt is liquified in a moist Air, it lets fall its Earth with a certain oily, acrid, and austere Liquor.

It is certain, that Salts contribute greatly to all Cures that are performed by Medicinal Waters. They are found in *Bath Waters*, as we learn from the Experiments of *Guidot*; and *Sepius* found a large Quantity of a certain white and bitter Salt in the *Pyrmont Waters*.

All these Qualities, and some others which plainly appear in Sea Water, incline us to hope, that the *Materia Medica* may soon receive some extraordinary Addition from this Part of Nature.

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all Sorts of MINERAL WATERS, now in Use, or
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| S eltzer Water, in large Stone-bottles. | <i>Shadwell</i> Water. |
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| The same in small Flasks. | <i>Bath</i> Water. |
| <i>Pymont</i> Water, in three- pint -bottles. | <i>Scarborough</i> Water. |
| <i>Bourn</i> Water, in large Stone- bottles. | <i>Bristol</i> Hot Well Water, from <i>Smith</i> and <i>Woodall</i> . |
| <i>Harrogate</i> Spa Water. | <i>Jeffops</i> Well, or <i>Stoke</i> Water. |
| <i>Holt</i> Water. | <i>Acton</i> , and <i>Dog</i> and <i>Duck</i> Water. |
| <i>Tilbury</i> alterative Water, from the old Well. | Tar Water, made agreea- ble to Bp. <i>Berkley's</i> Di- rections. |
| <i>Malvern</i> Water. | Sea Water, in its utmost Purity, taken up several leagues at Sea. |

Scarborough Salts, 2s. 6d. per Ounce. *Cheltenham* Salts
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appear by several Certificates under their Hands and Seals.

As large Quantities of *spurious* Waters are sold at a low
Price for the GENUINE Waters, and particularly the *Bru*
for

for the true *Pouhon* Water of *Spa*, as appears by the following Certificate, the Original of which is in my Possession; in order to prevent Impositions (*so dangerous to Health*) as much as lies in my Power, I presume to desire the Favour of those who are so kind as to honour me with their Commands, to give strict Orders, that the Messenger do always bring back one of my printed Bills, with a Receipt signed by their most obedient Servant,

W. O W E N.

We do prefer the Waters of the *Pouhon Spring* in *Spa* to any of the Mineral Waters in or near the Country of *Leige*, particularly to the Waters of *Bru*; which Waters have been notoriously imposed on the Public for the *Pouhon* Water, to our and our Patients Disappointment.

September, 1733.

| | |
|--------------------------|--------------------------|
| <i>Hans Sloane,</i> | <i>Tho. West,</i> |
| <i>John Shadwell,</i> | <i>J. Burton,</i> |
| <i>Jo. Hawys,</i> | <i>John Hollings,</i> |
| <i>N. Broxholme,</i> | <i>Tho. Pellet,</i> |
| <i>R. Mead,</i> | <i>Alexander Stuart,</i> |
| <i>Tancred Robinson,</i> | <i>M. Lee.</i> |

Note, *Bath, Bristol, Sea*, and several of the above Waters, come constantly fresh every Week, by Land Carriage.

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A

D I S S E R T A T I O N

O N A

GLANDULAR CONSUMPTION, &c.

THE *Consumption* which greatly afflicts our Island, and in the Cure of which, our Physicians find the greatest Difficulty, generally proceeds from a long continued Fluxion on the Glands of the Wind-Pipe, and its Branches, of the Lungs and other internal Parts. And this Distemper frequently arrives to such a State, before a Physician is consulted, that it is incurable: For it is in vain to expect a Physician should preserve the small Vessels from Ruptures, and keep the Fluids in a healthy State, when they are already burst and often eroded, not without the Diminution or Injury of some noble Part which Nature requires for the Continuance of Life, and which Art cannot restore; and when the Texture of the Fluids is already altered and vitiated by the purulent Matter resorbed by the Blood, and circulates with it in a mingled Stream.

When this is the State of the Disease, we are not to seek for a Cure, but rather a new and miraculous Restoration of the Parts destroyed; and this is the Reason, that this Disease is esteem-

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ed mortal by common Consent ; because it generally has made too great a Progress, before a Cure is attempted. So that upon my enquiring the Opinion of an eminent Physician, concerning a very dear Friend of mine, he told me, *He was in a Glandular Consumption, of which none ever did recover, nor ever would recover ;* which is true of those who have the Glands of the Mesentery, or of the Lungs, or other internal Parts, filled or vitiated by the Retention of *Pus* or purulent Matter.

This being the Case, I hope my Studies will prove acceptable to my Country, if by the Assistance of *Sea-Water* I can relieve the Disorder of the internal Glands, and seasonably procure a Remedy in the *Beginning* of this most dangerous Disease ; and preserve the Lungs, that noble Part, from an Impostume. I say in the *Beginning*, because, if the *Pus* or Matter is already generated, there is then no Help to be expected from this Remedy. This ought to be well considered, because where a Cure is attempted in vain, tho' the Case is incurable by all the Power of Physic, it often happens that the Medicine is blamed and rejected, as useless, and of no Merit ; and is thought incapable of doing what is really in its Power to perform. And this is the common Misfortune of all new Medicines ; for I have myself seen some Patients seeking Relief from *Sea-Water*, when the purulent Matter was already formed both in the external and internal Glands.

But what Applause can a Remedy receive from such Circumstances, or rather what Disgrace is it not like to meet with ? For in those I have seen, who died of a Consumption where the external Glands emitted *Pus* and whose Bodies were allowed

lowed to be opened, I never met with any in which the Glands of the Mesentery remained entire ; on the contrary, they were generally im-
postumated ; and further, the Bronchia, and the Glands of the Lungs, were so universally over-
spread with Pus, that wherever I made Use of the Knife, I could not help cutting the puru-
lent Glands, which, before they were opened, looked like Grains of Corn full of purulent Mat-
ter, pretty nearly resembling the miliary Glands found in a meazled Hog. See Figure I. which represents the Liver and Lungs of a Hog, wherein the Glands of those Parts are strangely morbid.

And indeed the Diseases of the Glands are more common, and rise to a greater Height in these than in most other Animals. Wherefore the Inhabitants of the Eastern Countries avoid eating Swines Flesh as much as they can, and because these Countries seem to be more afflicted than others with the Leprosy, Foulnesses of the Skin, and all Glandular Diseases; and therefore I judge, Moses ordained so many Ablutions, and Abstinence from Swines Flesh.

The internal Tumors of the Glands before de-
scribed, undergo the same changes as the external; therefore they are to be restrained by the same Methods; likewise, every State of the Tumor has its peculiar Indication.

I believe, nobody doubts that this Disease is often caused by the Fault of the Nurse, or the too great Indulgence of the Parents. For it is scarcely to be told how often the Foundation of this Disease is laid in the Cradle; for at that Time of Life when the Child ought by Degrees to be used to the Changes of the Seasons, which Nature seems to require; then you shall find it

smothered in Blankets, its Health impaired with Sweating, and the Heat of the Chamber, and by continuing at the Breast too long.

In the mean Time the Bowels of the Infant are constantly fretted with an acrid, sour milk, that produces frequent and green acid Stools; till sometimes, neglecting proper Remedies, it brings on Convulsions and Epileptic Symptoms. In this Case, the Nurse perhaps gives the Child a little Syrup of white Poppies, or something more powerful, to procure them both a little Repose.

When those Evacuations cease, which proceed from the Glands behind the Ears, then the Infant falls into the Gripes, accompanied with a slight Diarrhœa; which if you stop them with Diascordium, or any other Medicine, either the Disease is transferred to the Skin, or the Evacuation is renewed by the Glands behind the Ears, or by the inguinal Glands, or some of the larger Emunctories.

Thus while the Child by a too long continued Use of Opiates, is lulled to sleep, Chylification is perpetually injured; the Habit of Body which Nature perhaps intended to be strong and healthy, by these means is rendered lax and weak; the Blood becomes serous, pale, and morbid; the Bulk of the Glands, which Nature designed to moisten the Joints, daily increases, and the Heads of the Bones grow large; then the Glands of the Mesentery, of the Breast, and the Neck, are obstructed; and at length the Glands of the Lungs are infected with the common Taint.

And in all these Disorders, though the superfluous Humours may be carried off, in Women, by the Help of the Menfes, and by other Means in Men, while young; yet when they advance
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in Years, commonly after forty-five; or whenever these Helps fail, then the Glands before vitiated and relaxed, are attacked with new Obstructions, incline to inflammatory Diseases and suppurate, inſomuch that the Patient dies of a purulent Pthiſis, unleſs the Diſeaſe is ſtopt in its Progreſs; for when once the Pus is fixt in the Glands it requires the Hand of the Surgeon, and not the Art of the Phyſician.

Some Time ago, I viſited a Gentleman after a Fit, as he thought of an intermitting Fever, for which he had taken the Bark; but finding his Pulſe quick, accompanied with a certain hectic Heat, I judged the Shiverings were ſymptomatical, and that Pus was formed in the Liver; for his Eyes were tinged with a yellowiſh Colour; his Habit of Body was full, and inclining to Fat; and till that Time he had not been troubled with any violent Diſeaſe; having tried all Manner of febrifuge Medicines, I perſuaded him to go to *London*; from thence he went to *Bath*, and returned again to *London*; at laſt he came back into the Country, where he died of a purulent Dropſy. After his Death, I found a vaſt Abſceſs in the convex Part of the Liver; ſome other Glands were burſt, which had emitted a little Pus and Water into the Abdomen. But in the Lungs, where an Obſtruction began to be formed, there appeared only ſome crude Tubercles, without any Pus.

I think this is a plain Demonſtration that ſome Glands vitiate others, and arrive at a State of Suppuration by ſlow Degrees, and not by a ſudden Progreſs.

I have alſo ſeen a large Tumor, to which ſeveral Cluſters of morbid and ſcirrhous Glands ad-

hered; the Tumor was distended by a Matter like Bran, weighing eight Ounces, the Coat of the Glands was like the Membrane in the Gizzard of Turkey-Cocks, and other granivorous Fowls; it was burst, and emitted Water constantly from the broken lymphatic Vessels, thro' a small Passage under the Nipple; and was attended with no bad Symptoms for thirty Years. And although the Glands that adhered to the Tumor had at length turned perfectly scirrhus, yet the Tension being removed by the Emission of the Humour before described, the Tumor was free from Pain, and no Suppuration arose in all that Time in any adventitious Tumors. See Fig. II. which represents one half of the cystic Tumor with its scirrhus Glands.

I am now to consider the Diseases of the Glands, in doing which it will sufficiently answer my Design to give a general Idea of distempered Glands. I judge the Diseases of distempered Glands, to arise commonly from certain Obstructions proceeding from some Fluxion flowing faster upon the Glands than can be transmitted through their Tubes: Hence the Glands swell, their Coats are distended, and yield by Degrees to the growing Tumor, till the small Vessels burst, and Pus is formed: or from the Tumors confined in a Membrane, either a * *Steatoma*, † *Atheroma*,

* *Steatoma* is a hard indolent encysted Swelling, which contains a Matter like Suet, of the same Colour throughout.

† *Atheroma* is an encysted Tumour, which is a little soft, without Redness, Heat, or Pain. It contains a whitish Matter like thin Paste.

or † *Meliceris*, or something of this Kind is produced.

The Remedies of the Ancients for a lax and infirm Habit of Body, suggest to me these two Observations; one, that by giving those Medicines which destroy the sharp Humours, and correct the Acidities collected in the Stomach and Intestines, a sweeter and more healthful Chyle is produced; Flatulences are repressed in the Bowels; and hence the Liver, Spleen, Pancreas, and Mesenteric Glands, are less obnoxious to Obstructions; the *other*, that by *Sea-Water* joined with other Medicines, the Glands may be successfully purged, and freed from Obstructions; after which, it will be necessary to strengthen the whole Habit, by cold Bathing in the Sea, and so fortify the Constitution against new Fluxion.

Hitherto I have treated of the Nature of distemper'd Glands in General; but now I proceed to their different States; of which a recent Fluxion on the Glands is first to be considered; then the State of Augmentation; then the State of Inflammation; and lastly, the Termination of the Disease, either from dispersing the Tumor, or its turning into *Pus*, a *Scirrhus*, or a *Cancer*. And as my Design is principally to point out a Method of Cure in these Disorders, I think it proper to begin with the morbid State of the tracheal and pulmonary Glands.

When the concatenated Glands of the Neck, which are as it were linked together, and proceed from the Ears to the Collar-Bones accord-

† *Meliceris* is a round Swelling, void of Pain, easily yielding to the Fingers, and contains a yellow Matter like Honey in its proper Bag.

ing to the Courſe of the Veſſels of the Neck, appear ſwelled, and the Tonſils ſeem larger than uſual, then there is reaſon to ſuſpect, that the internal Glands of the Meſentery and the Lungs, are affected by a recent Fluxion. But while there is no Fever, aperient Medicines, with *Sea-Water*, having firſt taken away ſome Blood, will effect a Cure; and theſe Steps are to be taken, though at the firſt Onſet you find the Diſorder is in the ſecond Degree, or the State of Augmentation; for as the Glands are diſtended, ſo they ſubſide by Degrees; and a ſufficient Time muſt be allowed, not only to deterge and cleanſe the ſmall obſtructed Tubes, but alſo to procure a ſafer and ſitter Vent, by which the Humours that create obſtructions may be expelled.

And this is to be effected by the eaſieſt and moſt gentle Methods, we are therefore upon no Account to make Uſe of violent ſtimulating Mercurial Medicines, for nothing is more hurtful in Obſtructions of the Glands, than a ſudden and violent Efflux of the Humours attracted towards the affected Parts by large Doſes of *Mercurius Dulcis*; which Medicine, if it is ever uſed, ſhould be given cautiously and in ſmall Doſes, and ſoon after purged off with *Sea-Water*.

All the Glandular Secretions, in a healthful State, are performed ſlowly and with Eaſe; therefore all Medicines that are of a Cauſtic Nature, ſtimulate and wound the tender Parts, and excite Pain. Hence either a Tubercle or a morbid Gland, which perhaps might otherwiſe be eaſily cured, if it is haſtened to an inflammatory State, ſuppurates, and the Cure becomes far more difficult. On the Contrary, the Patient will bear the Stimulus of the *Sea-Water* ſix Months without
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any Inconvenience, and in an obstinate Disease of the Skin, I have known a Patient bear it tolerably well for a whole Year.

I insist more strongly upon these Matters, because I have known many Patients receive Damage by too large Doses of *Mercurius Dulcis*, who, perhaps, might have received Benefit from this Medicine sparingly given, and joined with *Sea-Water*. But *Sea-Water* will heal many Diseases, where Mercury is of no Service, and this puts me in Mind of the Case of a certain Patient which I shewed to Dr. *Johnson*, and Mr. *Craddock* the Surgeon, about the Year 1731.

The Patient was almost covered over with a Scorbutic Leprosy, and having thrown off all other Cloaths, lay only in a Gown; almost every Part of his Body was excoriated; he had been twice salivated, under the Care of Dr. *Tanner*, of *London*, without any Benefit: Yet this violent Disease was subdued by *Sea-Water*; but some other Disorders which afflicted the unhappy Patient, remained much in the same State.

Another Patient came to me from *St. Thomas's Hospital*, whose Case was not quite so bad; he had likewise been salivated to no Purpose, for he was hereby become lean and hectic, and the cuticular Eruptions were ranker and moister after Salivation. At first, he took Eryngiated Milk, and Vipers Flesh; by these Medicines the hectic Heat abated; and at length, by the Use of *Sea-Water*, the Disease of the Skin disappeared.

And indeed, where the Disease is exasperated by a great Acrimony, and when mineral Medicines do not agree with the Constitution, then Water and Asses Milk are most successfully used against the Scurvy.

I have hitherto treated of Tumors in the States of *Fluxion* and *Augmentation*. I shall now proceed to consider the State of *Inflammation*, that is, when the Disease is attended with a Fever, and then indeed the Tumours are to be esteemed true *Phlegmons* [inflamed Tumors] and are to be treated as such.

When a Fluxion, from any Cause, falls upon the tracheal and pulmonary Glands, they likewise grow diseased, and tumify in the same Manner as the external Glands; then the Irritation of the Fluxion produces a Fever, there arises a hard and dry Cough: the Face and Eyes are overspread with a Redness, a shooting Pain of the Head accompanies the Cough. This Cough proceeds from the frequent Struggles of Nature to burst the morbid Glands, and thereby to expel the hidden Cause of the Tumor, that by this Means the tumified Part might be reduced and restored to a healthful State. But in these Cases, I think the *Sea-Water* too much irritates the Disease, for the greatest Care ought to be taken that *Pus* should not be generated, which is never thrown out of the Lungs without the greatest Difficulty, because their loose Texture is so apt to retain it. But the minute and tender Vessels are broken by the continued Coughing; this produces an Hemoptoe, or Spitting of Blood, and afterwards larger Abscesses, and the Disease is terminated by a purulent hectic Fever.

But in this Case a new Method of Cure is to be pursued; for Bleeding must be used at proper Intervals, until the gelatinous or Buff Coat of the Blood, that resembles melted Suet, disappears; which, though it does not appear at the first Bleeding, yet is scarce ever concealed after the

the second or third Time. Then Purgatives of Manna, Cassia, Cream of Tartar, Tartar Vitriolate, or the like, are to be given; and the Patient is to be cooled with Emulsions of Nitre; and should use Water for Drink, abstaining from Flesh, Wine, and all Sorts of Malt-Liquors; by these Means generally, all the Signs of Inflammation are removed, the Cough and the Pain of the Head no longer afflict the Patient, the Tumors subside, and tho' they are not entirely dispersed, yet by these Methods, like the external Glands, when they are in the same State, they are free from Pain, and are no great Trouble to the Patient. But if this Method is either neglected, or too sparingly, or too late pursued, then *Pus* is generated in the Glands, and the Patient, as I said before, is taken off by a hectic Fever.

Although in these Cases we perceive many Glands burst, and the *Pus* thrown out, yet we must not terrify the Mind of the Patient, we are rather to give Hopes that the Lungs may be cleansed by proper Medicines, by the Nitre of the Air, and by riding; for the Stiffness of the Fibres being lessened, either because the Inflammation is removed by Evacuations, or because the Parts affected have expelled the Burthen that oppressed them, and as their Tone is laxer, they are commonly better defended by their own Mucus, and therefore Exercise is then safer. A Change of Air ought also to be prescribed, and the Mouth and Nostrils defended from the extreme Chilness of the Air, and it is proper to breathe through some Covering, while the Parts are weak and tender; for it appears to the celebrated

brated *Boerhaave*, that hard riding against a cold Wind, hath often been the Cause of a Quinsey or a Pleurisy.

Therefore, it is evident, from what has been said, that in the inflammatory State of the pulmonary Glands, both the Mind and Body are to be kept very quiet, until, by Venæsection, Lenitives, and nitrous Medicines, the Tension of the minute Vessels is relaxed, and the Fluids freed from the Danger of Extravasation. For in the State of Tension, the Contractions of the Heart are too frequent, the Arteries are irritated, and the Blood circulates too quick. Whence the Inflammation increases, the Blood being driven with a great Force, into the small obstructed Tubes, which can neither bear its Impetus, nor afford it a Passage in this State of Obstruction; therefore the Tension of the Vessels is necessarily augmented, and, without Help, an Extravasation must follow; therefore, all Irritation is to be avoided as much as possible, that we may preserve the Vessels of the Glands sound and entire; because upon this Circumstance, the Cure of the Patient entirely depends.

Sometimes also the Coat of the Gland grows thick, and the *Pus* is confined as in a strong Bag, from whence it cannot break out a long while. But, in this State of the Disease, neither *Sea-Water*, nor any other Medicines can do any Good. The Cure must now be performed by the Art of Surgery only.

But I should be unjust not to give *Sea-Water* its due Praise; for it is certain, that I have seen few Tumors of the morbid Glands, which, if the *Pus* was not formed, I could not preserve from them and afterwards disperse; and also restore
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the first Form and Magnitude of the Glands, by a due Treatment of the glandular Secretions.

For these Reasons, in the inflammatory State of the Glands, all aloetic, rosinous, and mineral Medicines, are carefully to be avoided; the unskilful or less cautious Use of which is always attended with the worst Consequences, which will appear plain by what follows in the Section concerning the Use of *Sea-Water* in bilious Colics. The ancient Physicians shunned these Medicines, for they never used to prescribe strong Emetics or Cathartics, 'till the Stiffness or *Crispitude* of the Fibres was suppressed; therefore before the Use of Hellebore, they judged the Body was to be moistened and relaxed by warm Baths, and a diluting and cooling Regimen, abstaining from Exercise, Flesh, and Wine; and indeed, thro' the whole inflammatory State, where there was the least Fear of Suppuration, they used these Medicines with the greatest Caution, or entirely rejected them. And this Practice of the Ancients seems to be deduced from hence, because they found that a Suppuration was generally the Consequence of this Method of Cure; which seems to be confirmed by *Gesner*; for when the Plague raged at *Zurich*, he observed that Hellebore forwarded the Suppuration of the pestilential Buboes.

Therefore in the first Days of the inflammatory State, they used to abstain from the stronger Cathartics, that is, 'till the Vessels were relieved, and either by Venæsection, by Sweating, or by some other Assistance, were delivered from the great Fear of Tension; which otherwise the Stimulus of a Cathartic might occasion. Therefore where a Cathartic is given, not to expel any prevailing Humour, but to diminish a Plenitude,
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and discharge the Superfluities of the first Passages, which burthen the Tone of the Solids, and in a manner oppress them, there this Method is always to be used, which proceeds most successfully by Lenitives.

And this shall suffice concerning the Glands in an inflammatory State. Let us now consider the *Termination* of the Disease: And in the first Place, that *Termination* obtained, by *dissipating the Tumors*, at the Time that the Fever is abated; so that the violent Motion of the Heart is appeased, and the frequent Contractions of the Arteries are restrained: The Fluids more attenuated and apter for Circulation: And the Glands before obstructed, are partly restored to their proper Functions, and then a perfect Ease ensues: The Vessels are preserved intire, and their Fluids are confined within their common Bounds of Circulation; but the Tone of the Solids remains weak and relaxed from the late Fluxion; and though the Magnitude of the tumified Glands is diminished, yet there still remains a little Swelling, but without Pain; and this Ease continues as long as no new Fluxion happens; for if that returns, the Glands are presently distended again.

Hence it happens, that most Patients say the Tumors increase, and grow painful, in the Beginning of every Month; and frequently imagine, that they increase and diminish by the Influence of the Tides and of the Moon; whereas about that Time the weak Parts are only loaded with a certain Periodical Plenitude, which is afterwards expelled by the Strength of Nature, in the same Manner as the Sex is relieved by the Eruption of the Menses: For at that Season, not only Tumors, but the Breasts also, and the whole
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System of the Glands are distended from the same Cause.

In this State of Diffipation, when the Glands of the Neck are grown softer, and the internal Glands continue weak and relaxed, by the Removal of the late Fluxion, I prescribe the *Sea-Water* with Success, and join to its Assistance the Ashes of Submarine Plants, Sal-Ammoniac, Æthiops Mineral, Antimony, Cuttle-fish Bone, burnt Pumice Stone, Coral, Coralline, burnt Sponge, and the like Medicines; which I have found useful, either from the Practice of the Ancients, or my own Observations. Whatever Helps I used to seek from external Applications, I shall freely declare, either when I come to explain the Method of Cure, or in relating the several Cases of the Patients hereafter described. In the mean Time, it is to be observed, that every Cure ought to be terminated by cold bathing in the Sea; which, when it is not ordered before the proper Time, that is, before the Glands are mollified by the internal Use of *Sea-Water*, it greatly conduces to a perfect Cure. And lastly, to prevent a Relapse, as the Ancients made Use of Gall-nuts, and other styptic Medicines, so I use to join the Bark to cold bathing, and chiefly in Diseases of the Ciliary Glands, when the Eyes are subject to frequent Inflammations; but then the Eyes also are to be washed every Morning with cold *Sea-Water*.

I have now gone through that State of the Tumor, viz. of *Diffipation*; which is the first Species of the Termination of the Disease, wherein the Glands are restored in Part to their Functions, and a healthy State, without the Rupture of any Vessels. But as every kind of these Tumors do sometimes terminate in a *Scirrhus*, which was the
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third Species of the Termination of the Disease ; for concerning the second, which was from the *Pus*; I have treated of it before, and shall mention it again ; it is therefore necessary I should explain what I call a *Scirrhus*.

I call that State of the Tumor a *Scirrhus*, when from any Cause the Parts cohere a long Time, and from thence are so strongly joined and hardened, that they can never be disunited, nor restored to their former healthful State, nor can their obstructed Vessels be opened by any Power of the Arteries ; but oftentimes the Hardness increases to that Degree, that the Tumors in some severe Cases are like a Stone, and such I call a perfect *Scirrhus* ; and this admits no Cure by *Sea-Water*, or any other Means, but by manual Operation. But the slighter Scirrhusities, if I may be allowed to call them so, without excepting any, are curable, if the glandular Secretions are skilfully treated ; for I have cured many by this Method, that so nearly resembled a perfect *Scirrhus*, that there appeared but little Hopes of a Cure, and yet the Patient was perfectly cured.

But sometimes the *Scirrhus* produces a *Cancer*, when the Hardness increases to that Degree, that the Circulation is stopped through the whole Tumor, and the Vessels are somewhere burst ; then they are a little distended by a livid Ichor that discolours the Skin, from whence the Physician or Surgeon has reason to foretel a Rupture of the Tumor. These are like Cancers, of a livid Colour, and like a Kind of *Echymosis*, or rather, as I think, like those lymphatic livid Vesicles, or little Blisters, that use to rise in the Parts of the Body, at the Beginning of a *Sphacelus*.

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But when after the bursting of the Tumor, the Ichor remains a long while out of the Laws of Circulation, and has acquired great Acrimony, which soon happens in the extravasated Fluids of all Animals, then the Contagion of this Acrimony is communicated from one Gland to another, and by Degrees the whole System of the Glands is seized with a Cancer; and this Acrimony is so virulent, that some Writers think it partakes of the Nature of Arsenic, and this is the Cause that it produces such large Escars in one Night's Time. Indeed, in this irritated State, the Use of *Sea-Water* seems to cause too much Irritation, but I have not yet made Experiments enough to determine this perfectly.

And thus I have considered the *four* different States of the morbid Glands; and from what has been said, it will appear, that there is little to be expected from *Sea-Water* in a true and perfect *Scirrhus*, nor in any Tumors contained in a Bag, or in an Atheroma, Steatoma, or Meliceris, or where the Matter extravasated is contained in the Middle of the Gland, like a Kernel in its Shell, before the Use of *Sea-Water* is begun, which nevertheless very seldom happens after the Cure is begun by this Method: nor in a true Cancer, nor in Ulcers with a Caries, where an Exfoliation is required. And yet I have seen some of these Cases cured, though the Glands were distempered at the same Time.

This is the Course of a Cure attempted without Success; let us now take a View of the successful Cures, and see what Assistance we may expect from *Sea-Water*; the Diseases therefore that are curable by this Method are as follow:

1. All recent Obstructions of the Glands of the Intestines and Mesentery; for by this Method Tumors are dispersed, and the bastard Iliac Passion is often prevented.

2. All recent Obstructions of the Glands of the Lungs, and other Bowels, which often cause a Consumption; for by this Method a certain continual and daily Secretion is performed by the intestinal Glands, and thus the Fluxion is drawn off from the Lungs, whereby the Cough ceases before an Abscess is formed, and the impending Danger of a Consumption is removed; which, as *Sydenham* rightly observes, often proceeds from the Violence of frequent coughing; for this weakens the Lungs, and excites Tumors: They grow inflamed, mature and erode the lax and tender Parts, so that in a short Time the Disease is got beyond the Power of Medicine.

3. Recent Tumors in the Glands of the Neck, or in other Parts of the Body.

4. Recent Tumors of the Joints, if they are not suppurated, and are neither turned to a *Scirrhus* nor Cancer, and do not proceed from a Caries of the Bones.

5. Recent Fluxions on the Glands of the Eyelids, from whence proceed Lippitudes.

6. All Foulnesses of the Skin, from an Erysipelas to a Leprosy.

7. Also Distempers in the Glands of the Nostrils, with a Swelling of the upper Lip: And these are esteemed very difficult Cases; but even these are conquered by this Method.

8. Obstructions of the Kidneys, where there is no Inflammation, nor any Stones too big to pass through the urinary Passages.

9. Re-

9. Recent Obstructions of the Liver; for by *Sea-Water* the Body is kept open, and those Medicines that are given in the Jaundice receive hereby more Power to exert their Virtues.

Now if I were more minutely to explain the Nature of recent Fluxions upon the intestinal Glands, it would be proper to describe those Glands; but this is unnecessary, and therefore I shall only add this Remark, that the whole alimentary Tube is in a Manner overspread with Glands, and is therefore liable to the same Disorders as the Glands of the Lungs; but with this Difference, that in the Tumors of one the *Sea-Water* cannot be applied to the Part affected, as it may be in the other, and therefore the Benefit appears the sooner.

Therefore where Fluxions have a long Time oppressed the Glands of the Intestines, they become hard and scirrhus: Then the *Rectum* is most grievously obstructed with Tumors; the Stools are accompanied with a vehement Pain, and the Excretions often contain only a Matter like Ichor, which injures the Neck of the Bladder by the Nearness of the Part, and at the same Time excites a Strangury, and a most painful Tenesmus. In these most severe Cases, if the Parts are not inflamed, or if they are only injured by the Compression, or if they only swell, then the *Sea-Water* chiefly produces two good Effects: One is, that hereby the Belly is most safely preserved from the Danger of Constipation; the other, that it is a better Discutient than all other Medicines. And indeed, the Ancients used the *Sea-Water* in these Diseases; for *Pliny* says, *the Physicians think Sea-Water alone more effectual in dispersing Tumors.* And in the same Author we find

this Remark, *Some Physicians prescribe the Sea-Water in a Quartan Ague, and in a Tenesmus.* Lib. 36. cap. 6.

But when these Distempers are neglected, or unskilfully treated, they sometimes turn into Cancers; where if there is too much Acrimony, this Method of Cure is ineffectual. Sometimes they turn into the bastard Iliac Passion; that is, when Tumors are seated in Part of the Intestines. I shall here insert a Case of this Nature, which, while I am writing, occurs to my Mind.

There came to me a Gentleman of a good Family, about forty Years old; he had a Tumor of the Kind before described, which adhered to the intestinal Tube, below the Region of the Spleen. When the Patient was entirely free from vomiting, I could feel the Tumor with my Hands, which was round, and as big as a large Tennis-ball. He had no Fever. After a copious Evacuation of the Excrements, by vomiting, the Patient remained easy for some Days, 'till the Stomach and Intestines were again stuffed with Fæces, and then they were again ejected by the Mouth. All means were tried in vain, for nothing would pass by Stool: but the Iliac Symptoms were renewed at stated Times, that is, between every seventh and tenth Day. He languished in this Distress several Months; first at *London*, under the Care of Dr. *Pellet*, my very learned Friend, for whose Memory I shall always have the greatest Veneration; then at *Bath*, under the Care of Dr. *Bave*. At last, he returned to me, in the same Condition as at his Departure: And because he was surprizingly wasted, I had the fairest Opportunity of inspecting the Tumor; but

but there was no Hope of Relief; he died soon after.

But if I had known at that Time, as well as I do now, the Use of *Sea-Water*, perhaps there might have been some Hope in this Case; for I am not acquainted with any Medicine that is so powerful a Discutient as *Sea-Water* taken inwardly, or that seems so well adapted to the Cure of the forementioned Disease: But in this Case it ought to be given alone, to keep the Body open, and this should be done before the Obstruction was quite confirmed in the Intestines. There is also this Benefit attending this Method, that *Sea-Water* promotes Digestion and Chylification.

And this is well known to those who cure Cattle and Sheep: for when a Beast ceases to chew the Cud, and it appears from thence the Digestion is injured, and there is Danger of losing the Animal; they presently restore Digestion, by repeated Drenches of salt Water, or by large Bolusses of Sea-Salt mixed with Honey. This Course is continued 'till the Passage of the Intestines is opened.

When I found these Things were so, it was plain to me, that the Use of *Sea-Water* would be very beneficial to Sailors in bilious Colics, both to prevent the Invasion of the Disease, and its Return after the Cure. This last is to be effected by a *Semicupium*, or Half-bath, and purging Salts, after the Inflammation has been removed by Bleeding. And I am informed by my Friends, that this Method is successfully practised. Many of these Distempers are produced in the following Manner: many Seamen, especially fresh ones, not used to the Sea, are commonly seized

with a Nausea, and Vomiting, which commonly attacks Passengers, when the Ship first gets under sail, and this affects some longer than others. While he continues in this Condition the Belly is bound, and the Sailor seldom recovers 'till it is opened. At the same Time very little Food is taken, and Recourse is had to spiritous Liquors for Assistance. Then, if they sail to a warmer Climate, there is a more copious Evacuation by the Skin, and therefore less by the Glands of the Intestines. A great Quantity of Bile is thrown up by vomiting, the Fæces become whitish and dry, as in the Jaundice, the Bowels are obstructed, and the Foundation is laid of a future Inflammation; for the Fibres, in these Circumstances, are dry, and deprived of that soapy Bile, which ought to give an easy and slippery Passage to the Fæces. This, among many others, is one Cause of the inflammatory Colics that happen to Sailors.

Being willing to get a true Knowledge of this Matter, I inquired of several Masters and Surgeons of Ships, and by their Descriptions I found this Disease had the Symptoms of a Bilious Colic; and understood that the Cure was commonly attempted by Aloetics, Scammony with Calomel, which tho' joined to an Opiate, the Stomach of the Patient would often throw up; then followed a black Vomiting, and there being no Evacuation downwards, the Intestines mortified, and Death soon ensued; therefore I thought it would be a useful Undertaking, and acceptable to Sailors, who seem by Nature designed for the Defence of this Island, if I could discover a safer Method of Cure in these Cases. For this Purpose, when
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the Colic proceeds from the Body's being costive, and the Patient has no Fever, then a Pint at least of *Sea-Water* is to be given every Morning. If this is taken in the first Stage of the Distemper it will preserve the Patient from any great Danger. But if it is neglected in the Beginning of the Disease, and an Inflammation appears, with a Fever, Vomiting, and difficult Stools, or none at all, then there is Danger of the Iliac Passion, which is attended with a black Vomiting, and the Fæces are thrown up at the Mouth, the Pulse is quick, but weak, followed with cold Sweats, and the Patient dies of a *Sphacelus*, or Mortification.

Sometimes indeed, after Shivering, Pus appears in some Part, which prevents immediate Death : But for the most Part, a purulent Tenesmus afflicts the unhappy Sufferer.

I have had an Opportunity of conversing with many Persons, Practitioners at Sea, as well as others, from whose Accounts I have described this Disease. And that the common Method, which is so dangerous, might be laid aside, I persuaded Mr. *Leith*, a Surgeon in the Royal Navy, to take a new Course, which was as soon as the Symptoms of Inflammation appeared, to bleed freely, and repeat it as Circumstances required, if neither the Pain nor the Fever abated : That no purging Medicine should be given, not even *Sea-Water*, till a sufficient Revulsion was made by Bleeding, and emollient Clysters. Instead of Aloetics and Scammony with Calomel, I desired him to give the following Bolus.

R *Of Tartar Vitriolate two Scruples, or a Dram,*
Salt of Tartar eight Grains, or half a Scruple,
 C 4 chemical

chemical Oil of Nutmegs one Drop, Lenitive Electuary enough to make it into a Bolus.

To be taken every four Hours till a free Evacuation by Stool is obtained.

He used these Means with great Success in these Distempers, for at his return he thanked me for this Prescription; and though during his Voyage the Sailors were attacked with Colics more frequently than usual, from their Intemperance and a Plenty of bad Wine, yet almost all recovered by this Method. After proper Bleeding, two or three Dozes in the most-obstinate Cases, generally opened the Body, and then the Danger was over. When the Inflammation was removed, the Patient was easily preserved from the Danger of a new Attack, by taking *Sea-Water* every Day or every other Day.

I have seen many violent Colics cured by this Method, where, if the Case required it, I used to order a Half-Bath before Purging; for though I have sometimes seen Dr. *Fuller's* Colic Pills and similar Medicines, given with Success, yet while the Inflammation continues they are attended with Danger. But that which should chiefly deter us from the common Method, is, that if those Particles, whether resinous or gummous, do not open the Body, they must enter into the Blood, and thereby increase both the Fever and the Inflammation. On the contrary, if the saline Medicines are not evacuated, but are received into the Blood, they are cooling, and restrain Inflammations and Abscesses. And further, bitter and resinous Pills are often rejected by the Stomach, though guarded with Opium; but a saline Bolus seldom disagrees with the Stomach, or rather has
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the effect of Salt of Wormwood and Juice of Lemons, and take off the Inclination to vomit. Therefore I am of Opinion that Aloetics, Scammony, and rosinous Substances with Calomel are to be entirely rejected in the inflammatory State of the Colic, and for the great Benefit of Seamen the other Method is to be followed; for it is plain they never want *Sea-Water*, and unless my Judgment and Observations deceive me, more are cured by that, of inflammatory Colics, than by rosinous Purges, which strongly adhere to the Intestines, and also increase the Distemper.

I believe what I have proposed will be sufficient to confirm the cooling Method for the future, which, I think, many Physicians do already approve. It is not new, and deserves to be considered with the utmost Attention; and because saline Purges were used so successfully in these Cases, therefore *Angelus Sala* bestowed such high Encomiums on *crude Tartar*. The Dose is from six Drams to an Ounce in Chicken-Broth. *Sal Gem* has likewise met with Approbation; because it has been found by Experience to lubricate the Intestines, promote Secretion from their Glands; as also to soften and resolve the Fæces. There are Instances of this Kind to be met with in *Forestus*, Lib. 21. Therefore, against Costiveness, a Pint of *Sea-Water* is to be drank fasting every Morning, as often as the Case requires; which, though perhaps it is not entirely of the Nature of *Sal Gem*, yet it is contained under the same Class.

And as the Glands of the Intestines seem to be formed by Nature to draw off and emit whatever is unprofitable to the Body, so I believe most glandular Diseases proceed from Disorders of the

the Glands ; that is, when neither the Glands themselves, nor the Mouths of their Ducts for want of cleansing, will allow a free Passage for whatever may be thrown upon them. I am certain also, there are many Diseases of the Skin which owe their Rise to the Disorders of the Alimentary Tube. And likewise, that when other Secretions are deficient, the Glands of the Alimentary Tube are drawn into Consent, and are affected at the same Time. And hence, very probably, proceed all Obstructions of the Mesentery and other internal Glands. And this commonly happens to Women when the menstrual Purgations are suppressed for many Years, and the Glands of various Parts are diseased, they labour under a continual Diarrhœa, though without any violent Symptoms, which though it continues so long, seldom excites a *Tenesmus* or any Signs of Acrimony ; for in this Case those Humours pass off by the Glands of the Intestines, which, in a healthy State, should be carried off by other Evacuations.

Having thus premised the Effects of *Sea-Water* in the Diseases of the internal Glands, let us now see what Power it has upon the external Glands ; in which as they are more open to the Eye of the Physician, so the Declension of the Disease and the Effect of the Medicine appears the sooner ; for it is worth observing, that the ciliary Glands, when red and excoriated, with swelled Eyelids, soon grow pale and dry with the Use of *Sea-Water*, and tend towards a sound State. The concatenated Glands of the Neck may be also seen to decrease daily, by the same Method, and return to their natural Shape when they are not suppurated, nor turned to a *Scirrhus*. By
which

which means the elegant Ornament of the Neck is restored, which the great Author of all Things seems to have formed with such Beauty and Dignity, that he might place the Head, being the last and most perfect Work, upon it as upon a most beautiful Column.

From the foregoing Consideration of the morbid Glands, I think the Reader is prepared and instructed to receive and comprehend the following Method of Cure that is levelled against tumified Glands, by Helps timely interposed: Therefore I shall proceed to that Part of my Design in which I proposed to explain the Similitude and Agreement of this Method with the Laws of Nature, that it may appear from hence, that Nature generally employs the same Assistances when she alone opposes any Disease with her own Powers. Then we must review the Medicines of the Antients, and their Method of curing morbid Glands; from whence it will appear how rational and convenient it is to join their Medicines with *Sea-Water*, that by their united Assistance we may disperse internal Obstructions, which are always attended with the utmost Danger.

And for this Reason, when I am sent for to cure an obstructed Gland, I always endeavour to penetrate into the remote and hidden internal Causes within; for if the Obstructions of the Glands of the Mesentery and Lungs cannot be conquered, what Benefit can there be in dispersing external Tumors? Therefore I seldom apply any outward Medicines before the Glands are mollified and altered by internal Remedies. But as it often happens in these Cases, the Business is beyond the Reach of Physic, and for the Reasons aforesaid, requires manual Operation; then, that
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is, in all external Tumors I leave them to the Surgeon, whose proper Work they are, who, I hope, will discover more accurately those Things which I have slightly touched, as being inconsistent with my little Leisure, and the Design of this Work; for my Intention is only to explain the Cure of morbid Glands in that State where the Vessels remain whole and free from Ruptures: Also where the Fluids, though something accelerated, do still obey the Laws of Circulation, and so the Disorder is a proper Subject of the Medical Art.

But there is no other Medicine, that I could ever discover, which may be safely continued so long Time, nor that cleanses and corroborates the obstructed Tubes so well as *Sea-Water*; for it has a certain soapy Quality, as powerful as the saline, which cleanses and disperses those viscid Humours which stop and obstruct the Mouths of the Lacteal Vessels, and successfully stimulates their Sphincters, whence they perform their proper Offices, and promote Chylification as well as in a healthy State. Thus, whatever conduces to the Nourishment of the Body is separated, and circulates with the Blood, and nothing is thus separated but what has been well prepared by the Alimentary Tube. But when an Obstruction arises in the Lacteal Vessels, and hence the Chyle is not well secreted, or is sucked out by the Intestines, then follows a Loss of Appetite, and the Chyle itself, as in the *Cæliac Affection*, passes off by the *Anus*, and this produces an Atrophy, or a general Wasting of the whole Body.

That these mesenterical Tumors proceed from the Obstructions of these Vessels, and the Circulation thereby prevented, will appear from that
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Experiment of our Countryman *Wharton*. Wherefore (says he) the *Lacteal Tumors* are exceeding small, and perhaps not yet discovered by any Person; for in dissecting several live Animals, having made a Ligature on the *Lacteal Veins*, between their common Receptacle and the Glands of the *Mesentery*, and the Passage of the *Chyle* being stopt, I have observed those Glands to swell a little that belonged to the Veins that were tied. See *Wharton de Glandulis*, p. 47.

I could cite many such Cases from various Authors, but I chuse to omit them for Brevity's sake, therefore shall only add, that when these Cases are attended with a *Hectic Fever*, there is a *Pus* subsisting every where; but if it is otherwise, and the Disorder seems to be mild, gives Hopes of a perfect Cure. Nevertheless, as in these better Circumstances the more lax Parts of the Body are affected, therefore there is reason to be apprehensive of Danger; for unless the Patient has Resolution to continue this Method a long Time, and will finish the Cure by cold bathing in the Sea, it is very probable that upon a Return of a new Plenitude of Humours the Disorder may be renewed, for the Glands being weakened by the former Disease, have little Strength to resist a new Fluxion. I must acknowledge there is required great Constancy and Resolution to support the Tedioufness of the Cure; but I think it is better to bear this than to suffer a languishing Death by a Consumption, or a Rottenness of the Bones, which is a common and well known Distemper.

I suppose, now, it is plain that there are chiefly two Causes of morbid Glands; one is a Fluxion of redundant Humours upon the Glands; the other

other is a Weakness of the Parts affected, whereby they cannot resist the Fluxion; and where neither of these Causes exists, no notable Disorder of this kind can arise; for if there is no Redundance, there can be no Oppression; and if there is no Weakness or Laxity, it follows that the elastic Force of the Vessels will resist the Disease; but if both these Causes are absent no Tumor will arise.

But I must proceed to explain, as I proposed, by what Means this Alteration of the Habit is to be effected, and how chiefly some Secretions may be directed by the Skill of the Physician, and also which of them seem principally to be formed by Nature to give Assistance to the weak Parts, and to lighten that Burden, with which they are oppressed; and lastly, Experience shews that in those Cases which properly belong to the Medical Art, the Physician seldom wants Success but where the Patient wants Constancy.

But in considering the Changes of the Animal Secretions, I shall only subjoin those Laws that are apparent and unchangeable; therefore, I reject the obscure Terms of Coagulations, Concretions, and hereditary Disorders; and think I can ascribe those Distempers to more certain and less intricate Principles; for whatever Cause it may be that throws a Fluxion upon those lax Parts, so that the Humour flows too fast to obtain a Passage, must necessarily occasion Tumors there. I have seen Tumors in the Glands of the Neck, that were occasioned only by the Irritation of Blisters behind the Ears. And *Wiseman* mentions the Case of a Person who lay a Summer's Night upon a Form, but his Head hanging down, while he slept, one Side of his Neck lay upon the

the Edge of the Form. When he awoke he found several swellings in the Glands of his Neck, some of which which were as big as Walnuts *. The same Author observed, that the same happened to Children when the Tonfils were compressed by being bound too tight. A Pain in the Breast brings a Fluxion on the axillary Glands, and Diseases of the Legs and Thighs cause Swellings in the inguinal Glands. Numberless Examples of this Nature might be produced.

Therefore these evident Causes direct us to the best Way, and point out a Method of Cure; but if the Causes mentioned by other Authors should please some Persons better, such as cancerous, scrophulous, and scorbutic Humours, I shall not enter into a Debate, nor add any thing more to make them change their Opinion; but this I will affirm, that there is no better Method of Cure in these Distempers than that performed by *Sea-Water*.

* *This Passage in Wiseman's own Words is as follows, Page 392.*

I shall give you one remarkable Instance of a Cook's Servant in the *Old Bailey*, who sleeping one Summer's Night on a Form, his Head slipping off, the one Side of his Neck pressed upon the End of it; when he wakened, his Neck was full of *Strumæ* on both Sides, some as big as Walnuts, other less; they were of different Figures, and distinct from one another. The *Strumæ* continued, and after a few Days apostemated and mattered, and became virulent Ulcers; he died tabid within half a Year.

A *strait Stay*, as some Women and Children wear them, hath too often had the same Effect. Pain in the Breasts makes them under the Arms; and in all Habits of Body, a sore Leg hath often caused as much in the Groins.

SECTION II.

HAVING thus revived whatever belongs to the general History of the morbid Glands, I think it will plainly appear to every Physician, and even to any one unskilled in Anatomy, that he has the Care of a Body fitted with Organs, the Health of which depends upon almost innumerable Secretions regularly performed.

For as the Author of human Nature foresaw that some of these would be obstructed by various Accidents, and less fit for the Laws of Circulation, he formed the Body with plenty of Secretions for the Purpose of mutual Assistance; that when one of these are impeded, the Body might be relieved by the Help of the others. And indeed Nature cures many Diseases by her own Power after this Manner, and for this Reason she is properly stiled the *Healer of Diseases*.

For where this or that Secretion is impeded she commands another to perform its office more copiously, although, perhaps, not so conveniently. And unless Nature performed this by her own Strength, a little too much Meat or Drink, or the Changes of the Air, or the Seasons would destroy this most beautiful Structure, Man.

Upon these Considerations I always thought it a Matter of the highest Consequence for a Physician to imitate, as near as may be, the Process of Nature; and where any Secretion is obstructed or diminished, to take care to facilitate and encrease another.

And

And, indeed, Nature takes this Method for expelling Diseases, which otherwise use to arise from obstructed Glands; and this is effected upon going into a colder Air, the Perspiration by the Pores of the Skin is suppressed, when a sudden Fluxion distils from the Eyes and Nostrils, and the Glands of the Mouth and Throat are affected, so as to produce the Distemper which Physicians call a *Catarrh*.

But all these are the Endeavours of Nature to throw off the Redundances that proceed from the obstructed Perspiration: And indeed whoever observes this Rule of Nature may check the Violence of the Distemper. For though the larger Emunctories of the axillary and inguinal Glands, &c. afford great Assistance, yet they are not so subservient to the Will of the Physician as the Evacuation of the alimentary Tube, which seems designed by Nature for the ready Discharge of any Redundances. And where the Redundance of superfluous Humours causes any Complaint, this affords the quickest and easiest Discharge: Nor is it, perhaps, necessary that the Fluids should undergo such a fine Trituration as when they are carried off by Perspiration.

He that knows how to make a right Use of these Helps, will direct the glandular Secretions with the greatest Judgment; and if he does not make a perfect Cure, he must certainly procure some Relief; because he can turn the Current of the Disease into another Channel, perhaps, designed for that very Purpose. Nor is it a small Matter if a Physician can change a dangerous Distemper into one less dangerous; so that the Patient, who would otherwise die of some acute Disease, may still carry on those morbidic Seeds to a more ad-

vanced Age, which, perhaps, are sown purposely in us, as fit for the Diffolution of the Body.

I wish this divine Method of Healing, which consists in the Mutation of Diseases, was better known to us all; for I believe it would be much better for the Health of the Patient and the Credit of the Physician.

Another remarkable Instance of this Method is found in the Cure of Dropsies by the Help of the absorbing Vessels. When for a Season the Disease is thrown upon the Kidneys, and the Secretion being turned off from the Glands of the Peritonæum, the included Water is absorbed and drained off by the Kidneys; which is often performed by the Help of soapy Medicines, and the Use of lixivious Salts; and I still remember that the celebrated Professor, Dr. *Boerhaave* told me, he had cured many Dropsies by this Method. But I shall subjoin a Case which I think the most remarkable.

I was sent for to a Countryman's Wife, and asked if it was proper to draw off the Water by the Paracentesis, or Tapping. The Surgeon thought there was a vast Quantity of Water in the Abdomen; but because the Woman was weak, and at that Time unfit to bear the Operation, we first tried the Assistance of Medicines; and because this Dropsy was caused by obstructed Kidneys, I gave the following Things.

R Of prepared Woodlice two Drams, of Venice Soap half an Ounce, of Gum Ammoniac two Drams, Balsam of Sulphur with Oil of Turpentine, enough to make ten Pills of every Dram.

Of which fix or eight are to be taken every Day, drinking after them a Draught of the following Wine :

R Salt of Wormwood one Dram, Loaf-Sugar three Drams, Chemical Oil of Nutmegs six Drops, White-wine a Pint ; mix them, and make a medicated Wine.

After taking these Medicines she voided sixteen Stones of an irregular Shape of about the Size of common Marbles that Boys play with.

When I was sent for again after she had taken these Medicines, the Woman was seized with such a great and continual Flux of Urine, that the Sphincter of the Bladder was overpowered, and the Water flowed out involuntarily, and went through the Bed and the Floor of the Chamber. The Patient was then restored by proper Cordials, and bound with proper Bandages, and thus the Dropsy almost in a Moment of Time was absorbed and drained off by the Kidneys.

The Woman lived fifteen Years after without any Relapse. This proves what I mentioned before, that the Secretions may sometimes be governed by the Will of the Physician, and that the Glands will readily secrete their Fluids when they are urged by a Stimulus either of Pain or Vellication ; which will appear by the following Example. I had a Sheep which, tho' she had no Milk, took a Lamb which had lost its Dam ; upon the Lamb's pulling the Teat it drew such a Quantity of Milk, that the Lamb grew fat and strong. The Shepherd positively affirming this to be true, I ordered him to bring me the Sheep ; (for he mentioned this about Shearing-time) the Dug was very full of Milk, though it was nine

Months since she had suckled a Lamb before. And several other Shepherds assured me the thing was true, and not uncommon.

The following Story from *Regner de Graaf* is to the same Purpose. Mr. Vandeveld, in whose House I lodged at Delft, had long since a Bitch that was very fat, out of whose Dugs a Cat sucked so much Milk for several Years, that it was almost its whole Nourishment, and that for many Years, tho' she never had any Puppies, nor was ever pregnant. For the whole Time she was proud they watched her carefully; however, at last she happened to grow big with Pup, and from that Time the Cat would suck no more. See *De Graaf de Vir. Organ.* p. 126.

I think it needless to illustrate this any farther; and upon this Foundation I attempt to cure all recent Tumors and Fluxions upon the tracheal and pulmonary Glands; from whence, very often, *Hippocrates* affirms, Consumptions arise: For, (says he) Others are seized with a great Fluxion upon the Throat, from whence there commonly follows a Consumption; for the Lungs are stuffed with Phlegm, which becomes a Pus that corrodes the Lungs, and the Patients do not easily recover. See *Hippocrat. de Glandul.* Sect. 10.

These recent Fluxions are successfully cured by this Method, and it seldom fails but in Cases that are grown desperate by long Continuance.

By the same Method also I treat recent Tumors of the Glands in the Joints and other Parts, and have seldom found the intestinal Glands deceive the Hopes of the Physician or the Patient. But I do not expect every thing from these Means; for I have seen some cuticular Eruptions so obstinate as to elude all the Force of this Method: But I have conquered many of these, (rejecting first all Medicines

Medicines of a stimulating Quality, and confining the Patient to Water and a Milk Diet) by those very Medicines which before had no Effect. But when the Vessels are contracted by stimulating Medicines, which allow no Way to carry off the Disease, there the Patient is most conveniently prepared for this Method by warm Baths, drinking Water, and the Use of lenient Alteratives, with a Milk Diet.

The larger Glands of the Neck, of the Arm-Pits, and the like, are more easily evacuated than the rest; but the Glands of the Skin are more troublesome, and require a longer Time before they can be cleansed; but those Diseases that are any Species of the Herpes are the most obstinate.

Sometimes I have seen the Patient affected with a *Nausea*, from the Topical Remedies used in a Relapse; but seldom where purging with *Sea-Water* was joined to the other Means; for here this Disorder is prevented by opening the intestinal Glands. And when the Current of the Disease has been turned this way for a little while, the Evacuation becomes as it were natural, and that Secretion by the Glands of the Skin is not found necessary to preserve the Health of the Patient: But if a Relapse happens, we must have Recourse to the same Helps which seem appointed to carry off the Disease; for unless the Passages are obstructed, they are, doubtless, designed for that Purpose. But how well the Glands of the Intestines are fitted to receive the Humours transferred from the Skin may be easily perceived by the ceasing of the Colic upon cutaneous Eruptions; and if these Eruptions are repelled, the Colic (and often with a *Diarrhœa*) returns; for here the Glands of the Intestines are affected in-

stead of those of the Skin, and the morbid Matter is thrown upon the Bowels, which else would break out in Pustules, or pass off by Perspiration. Something like this is found in *Hippocrates*. But if the Fluxion retreats, and the Phlegm shall pass by the Palate, and fall into the Belly, such have a Flux of the Belly, but no Sickness. See de Gland. Sect. 9.

Therefore this way of Cure, which seems to follow the Example of Nature, is commonly successful if skilfully used. Moreover I have observed, that sometimes when the Glands have been swelled a long Time, and oppressed with Humours, and when their Texture hath been weakened by frequent Fluxions, that it is necessary not only to procure a more plentiful Evacuation by the intestinal Glands, but that there should be also a greater Revulsion than can be safely made by the Help of Purgatives. And here I found Emetics very useful; and when the Glands of the Womb are weaker than the rest, purging with *Sea-Water*, with repeated Emetics, and bathing in the *Sea-Water*, often succeeded to my Wish.

But as I think Turpeth Mineral, and other Mineral Emetics, too strong for the tender Constitution of these Patients; I make use of Ipecacuanha or Squills; and how useful Squills are, as an Aperient, may be easily perceived by their excellent Use in Dropsies, and in Disorders of the Breast; and in Diseases of the Glands I esteem them to be the best Emetic among Vegetables; for they make a safe and effectual Revulsion; they open the Kidneys, and augment all the Secretions; and the Patient runs no Risque of a colliquative Diarrhoea, which very often produces a Consumption. Gerard observes, that of Squills roast-
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ed with eight Parts of Salt, one Spoonful taken fasting loosens the Belly. And if the Infusion of Squills is given with strong Cinnamon Water, it seldom excites a Vomiting, but sometimes passes off by Stool, and sometimes by the Kidneys in a copious Stream. And hence its Use is so justly applauded in the Dropsy.

Having taken this Notice of the Virtues of Squills, it will not be improper to observe, that the Ancients had almost all their Remedies for Diseases of the Glands from the Sea; which I think deserves Notice, for we must naturally suppose, that their known Virtues were the Cause of their being almost universally used; especially as the Practice of the Ancients was not founded upon any particular Hypothesis, but rather derived from Experience, that Mistress of all Arts.

As I have mentioned Squills, I hope to be easily excused if I take a slight View of the Remedies of the Ancients; but I would have this first taken Notice of, that it would, in my Opinion, be very wrong to deprive this Method of mine of the Assistance of other Medicines, which all other Methods of Cure claim as their common Right.

For though the *Sea-Water* can do many and very great Things by its own Virtues; yet it is sometimes assisted by the mutual Operation of other Medicines. But to return: The Medicines most used by the Ancients in Diseases of the Glands were prepared from a Calx, or a lixivial Salt. *Pliny* observes, that *the Ashes of Oyster-shells relieve the Inflammation of the Uvula, the Swellings of the Glands behind the Ears, Carbuncles, and Hardness of the Breasts.* And indeed the Ancients used all Sorts of Sea-shells calcined; also in the same Cases burnt Pumice-stone, calcined Sponge, burnt

Cuttle-fish Bone, &c. And at present we find every Sort of Calx useful to dissolve Concretions, and correct the scorbutic Taint of the Blood. The Reader will perhaps excuse me if I relate the Case of a certain Patient who was long afflicted with a Cough and Spitting of Blood; but upon taking the *Aqua Benedicta* of Dr. Bates, he spit up two Stones that were rough and softish like Chalk. I imagined this proceeded from the Stones not being entirely dissolved by that Medicine, which was taken with Milk. But however that might be, he was cured.

There is a Species of *Madrepora*, which the *Americans* burn to Lime, and, with this Remedy, cure the Natives of Swellings of the Glands, if we may believe their own Accounts. And the *Siamese* have such a great Esteem for a certain Lime made of Sea-shells, that they curiously temper their famous *Areca* with it, which they are almost always chewing. This Mixture is made of a certain Fruit about the Bigness of an Acorn, cut in small Pieces, being first mixed with the Lime of Sea-shells. This is wrapt up in the Leaves of Betel. *Bontius* mentions this Medicine in his Book *De Medendi Methodo Indica*. Besides this, we have here (says he) a peculiar and noble Medicine, which is made of *Areca*, Betel, and Lime made of burnt Oyster-shells, which being chewed draws Phlegm from the Head, and consumes the same in the Stomach, and prevents its filling the Head with Vapours, from whence those Catarrhs proceed. See Chap. 12. And afterwards says, For the Description hereof, and the other extraordinary Virtues with which it is certainly endowed, see in *Garcia's History of Spices*, Cap. *De Betel. & Arec.* Then also writing in the 18th Chapter of an obstinate Herpes, or Ring-worm,
called

called by the *Indians Courap*, he says the following Liniment is used successful.

R Of Opium half a Dram, Calx, or Quick-Lime, made of burnt Shells two Scruples [*ſo Bontius*], rub them on a Marble Stone with the Juice of Love-Apples. When the Patient uſes it, let him ſcrape off the Cruſt of the Herpes, then wiping off the Ichor, anoint the Part.

I recite theſe Paſſages to confirm the Uſe of a Lime with *Sea-Water* in Diſeaſes of the Glands.

Moreover, all the Kinds of *Alga*, or Sea-Wreck, deterge powerfully, whence they had the Name of *Fucus*. The beſt for this Purpoſe is the *Quercus Marina*, newly taken out of the Sea. But as I ſhall hereafter ſhew the Uſe of this Plant, with a Deſcription thereof, I ſhall ſay do more of it here. The Ancients mention ſeveral Sorts of *Alga* or Sea-Wreck, as the *Palea Marina*, *Alga Lactuceæ*, and *Alga Fœniculata Tinctoria*, of which the latter was eſteemed good againſt the Sting of the Scorpion, and was therefore uſed in the Theriaca, as *Nicander* affirms; and even at this Time our Fiſhermen, when they are ſtung by the *Paſtinaca Marina*, or *Sea-Dragon*, and cannot get the Liver of the Fiſh, which they reckon a certain Remedy, in this Extremity have preſently Recourſe to Sea-Wreck, and apply it to the Swelling, which aſſwages the Pain of the Wound, and diſperſes the Tumor. We are alſo told by *Garidelius*, that the Inhabitants of *Provence* apply the Sea-Wreck to bruised Parts of the Body, which, by its Virtue, diſperſes the Contuſions: And afterwards cites theſe remarkable Words of *Pliny*: *I myſelf knew a Man cured*
by

by the Sea-Wreck, who fell from a high Tree as he was lopping it, and broke almost all his Bones. He was wrapt all over with it, which was kept constantly moist with its own Water, and was never removed, but when for Necessity of Change, fresh was applied; and by this Means he recovered perfectly in so small a Time that it is almost incredible. See *Pliny's Natural History*, L. 27. Cap. 8.

And tho' I know that *Pliny's* Authority has very little Weight among the Learned, yet a Distinction is to be made between those Things which he relates upon the Testimony of others, and what he declares he saw with his own Eyes.

But it is sufficient to my Purpose to draw this Inference from hence, that the Alga or Sea-Wreck was used by the Ancients to dissolve Tumors, to which Testimonies concerning Sea-Wreck we may add the Authority of *Dioscorides*. He takes Notice that Sea-Wrecks of every Species are cooling, and particularly useful in the Gout and Inflammations, if newly taken out of the Sea.

The Ancients also used *Alcyonium*, or, as it is called, the Froth of the Sea, in the same Cases, of which they describe many Kinds; but *Dioscorides* affirms that to be the best Sort, which is of a red Colour. He says it was composed of a certain Matter resembling little Worms, and brought from *Miletus*. The Ancients used to calcine this with Salt, and made hereof a certain absterging Medicine. *Matthiolus* testifies he saw this at *Venice*. I confess, indeed, that I could never find any. Out of these Materials various Forms of Prescriptions are easily composed: But, after the Example of *Cælius Aurelianus*, I have most frequently

frequently used the following Powder with Success.

R *Cuttle-fish Bone burnt, Pumice-stone burnt, Saltpetre and Coralline, of each equal Quantities.*

For Patients that are Children I use Coralline chiefly, because of its Excellence in destroying Worms. *Matthiolus* testifies, that a certain Boy, by this Medicine, voided above an hundred Worms; and *Brasavolus* observes, that Nitre is good for the same Purpose. *I give a Dram and a half of Nitre in Broth, and it brings away viscid Matter, and sometimes dead Worms; for it kills Worms in a wonderful Manner. I have given it, not exceeding a Scruple, to a vast Number of young Children, and it destroyed all Kinds of Worms. See Anton. Musa, Brasavol. De Medicament. Purgant. p. 122.*

Medicines outwardly applied are often successful against external Tumors. I have happily used a Lotion made of Oil of Tartar *per Deliquium*, mixed with Sea-Water, when the Glands were almost turned to a Scirrhus. But if the Stricture of the Vessels is to be relaxed, *Pliny's* Decoction of Frogs in Sea-Water is vastly preferable to the common *Plaster of Frogs*.

But Nature herself supplies us with the best Medicine for dissolving Tumors, in the *Quercus Marina*, or Sea-Wreck, at one Season of the Year; for in *July* this Plant bears certain Vesicles or Pods that contain a slippery and soapy Juice. These Vesicles are to be squeezed in the Hands, and the Tumor rubbed with them till it imbibes this soapy Liquor: And lastly, it must be washed with Sea-Water, and dried perfectly clean. The following *Fucus*, or Soap, is equally, if not more powerful

powerful for the same Purpose, which I frequently use.

R *Of the Vesicles of the Sea-Wreck, full of their Liquor, gathered in July, two Pounds; Sea-Water two Pounds; let them stand together in a Glass Vessel ten or twelve Days, till it makes a Liquor nearly approaching the Thickness of the thinnest Honey, then strain it, and therewith rub the affected Glands (chiefly when the Tumor is abating) twice or thrice every Day. Afterwards wash it clean with Sea-Water.*

Nothing exceeds this Method in the Decline of the Tumors; for it disperses all Hardnesses.

But all the acrid Prescriptions of Mercury promote a Callosity, as may be seen in the Use of the red Precipitate; therefore to disperse scirrhus Tumors, we must use such *Formulæ*, or Prescriptions, that stimulate the Solids without hardening them. And indeed these outward *Formulæ* are therefore beneficial, because they have a dissolving Power, and fit the Vessels to send back the Humours into the larger Tubes, whereby the Disorder is reduced to the Laws of Circulation, and is more under the Command of the Physician. But all those *Formulæ* are hurtful that promote a Suppuration, and it is our Business chiefly, either to guard against a Pus, or to extirpate the Tumor; for when once a Gland is suppurated, it fouls the Blood, and in a manner lays the Foundation of other Tumors; therefore great Care is to be taken by the Use of *Sea-Water* to correct the Tone of the Solids as well as the Taint of the Fluids; and Regard must be had to both these Intentions jointly; for although *Sea-Water* is alone very powerful, yet in Glandular Diseases

eases of the Liver or Kidneys saponaceous Medicines are to be given, that by their Assistance the Stiffness of the Fibres may be lessened; that the Passages may become more slippery; and that the Stones in the Liver or the Kidneys may find a readier Passage upon drinking Salt-Water. But if there is the least Cause to suspect a *Febricula* or little Fever, or Pus generating in the Bowels, I lay aside Soap and lixivious Salts, and depend entirely on Bleeding and salt Purgatives. *Sea-Water* resists Putrefaction, and is not so apt to excite Imposthumes as the Rosinous Purges, as I observed before.

Besides which, *Sea-Water* most excellently deterges and dissolves, and also draws forth the Humours from the tumified Glands.

Many cure Dropsies with Salt, and remove an old Cough with a Linctus thereof. Pliny, L. 30. cap. 9.

Neither were the Ancients ignorant of the Uses of Salt against Putrefaction, for they ordered it to be held under the Tongue till it was dissolved, every Morning. They likewise used it to cleanse the Teeth and Gums, to restrain Erosions and all Putrefaction. And I believe it is an excellent Dentifrice, because amongst the great Number of Women that get their Living by daily picking up shells upon the Sea-shore, you shall seldom see one with rotten Teeth; on the contrary, their Gums are generally firm, their Lungs sound and free from any scorbutic Cough; and this is chiefly caused by the saline Particles which are communicated to the Air from the Surface of the Sea; or rather which are dashed out by the breaking of the Waves, for little or no marine Salt is exhaled by the Heat of the Sun.

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It would be unjust in me to pass by the Use of this Method in a *Bronchocele* or Swelling of the Fore-part of the Neck, because it is here of great Service. And whilst I was writing this, I received a Letter from my very learned Friend Dr. Lee, which confirms this. *Sea-Water* (says he) is of great Benefit in many Kinds of Diseases. This Medicine performs those Effects in strumous and scorbutic Cases, which perhaps you may in vain wish for from any other. A *Bronchocele* which was fixed many Years, so that the Breathing was greatly affected thereby, either in speaking or moving, was cured by this Remedy. I knew the Leprosy itself twice cured by drinking and bathing, when the Surface of the Body was almost covered with Spots and Scales : But this you are well acquainted with ; and others should understand that the same Helps agree with all Patients as well as with all Distempers, and would certainly agree with them more readily and frequently if their Use was more accurately observed by Persons rightly qualified.

When a *Bronchocele* hath continued a long Time it generally contains extravasated Humours, which must be treated by manual Operation.

In the mean Time I persuade the Patients to shave their Heads, and expose their Necks to the cold Air, and to rub them with moist Sea-wreck, upon the Decline of the Tumors of the *concatenated Glands* [of the Neck] for nothing, as far as I can judge, does so much weaken the Tone of the infirm Parts as the Use of warm Cloathing. Indeed the whole Regimen of Cloaths, Food, Air, and Medicines should be cold, which often prevents a Scirrhus or a Cancer ; for the warmer State of the Air makes these Distempers more common among the *Asiatics* than in the more Northern Countries,

Countries. *As to external Causes, chuse a cold and moist Air, chiefly cold. Hence Cancers are seldom found in Germany, but frequently in Asia. See Fabricius ab Aquapend. p. 120.*

I have often had Boys brought to me, weak and pale, with long thick Hair hanging down their Necks, and covered up with the greatest Care, lest the tender Creatures should be killed with the Cold, the whole Texture of the Body being relaxed with the Heat of their Cloathing, and with nocturnal Sweats. I have sent them back to their Parents, with their Hair cut off, their Necks bare, with a florid, youthful Countenance, having first strengthened their Limbs by bathing in the Sea.

I mention this to persuade fond Parents not to enervate their Children, that are naturally healthy and strong, by too warm Cloathing in their Infancy.

The *Sea-Water* is also an excellent Remedy where the Belly is bound; for the Intestines being evacuated by its Assistance, and Crudities carried off, which would else oppress the morbid Bowels, it gives an easier Passage to the Gravel and Stones out of the Biliary Duct.

And thus I have faithfully declared, as far as I am able, what may be done, and what cannot be done by *Sea-Water*; but where there was the least Cause to doubt, there I have been silent, or have acknowledged my Ignorance, without imposing my Conjectures or Fancies upon the Reader. The several Cases subjoined were treated under my own, or by my Friends Inspection, whose Relations I can as much depend on as if I had seen them with my own Eyes; and although we do not always meet with the same Success,
yet

yet I have more Dependence upon this than any other Method.

But as some Persons, perhaps, will be desirous of knowing how I came first to take notice of this Medicine, and upon what Authorities I was induced to apply my Studies to discover its Use, I shall add a few Lines on this Matter.

In the first place, I had long since observed, that the Inhabitants of the Sea-Coast made use of *Sea-Water* in Disorders of the lower Belly, and chiefly in those proceeding from Worms. I also found, that *Dioscorides* employed a whole Chapter in reciting its Virtues; but I observed that both he and *Pliny* either had transcribed the vulgar Opinions, or else knew little of the Power of this Medicine, and but little approved of its Use: And I was the more persuaded of this because I saw this Water successfully used by the Inhabitants of the Sea-Coast. And these Circumstances pointed out some extraordinary Observations of its Virtues, which led the way to these diligent Enquiries. Besides, I had experienced that *Glauber's* Salt was an excellent Purgative in many cutaneous Disorders, and resolved to try the Effects of *Sea-Water* in the like Cases, and I presently found it was an excellent Medicine in Disorders of the cutaneous Glands.

Afterwards in 1730, I read a Book intitled, *The Domestick Companion*, which advises the Use of *Sea-Water*, and commends it to Sailors as a most convenient Purge. And lastly, some Years ago, having some Conversation about this Matter with Mr. *Webb*, who is a very worthy Man, and a skilful Surgeon, and who had tried the Virtue of this Medicine, he pressed me to try farther, and consider it more accurately.

And

And these are the Reasons and Authorities which first led me to use *Sea-Water*, and afterwards confirmed me in the Knowledge of its Virtues. And indeed I have employed much Labour, Study, and Diligence in this Matter, in repeating various and almost infinite Experiments. I think proper to observe, before I proceed to the Recital of the several following Cases, that all the Medicines here prescribed were procured from the Apothecaries Shops, and that every Case is selected out of several of the same Kind, lest a longer Account of Cures should prove tedious to the Reader.

C A S E I.

Of a Gland of the Lungs maturated, with large Ton-
sils and scrophulous Tumors in the Neck, and near
the Ears.

I W A S sent for to a Boy twelve Years old, extremely wasted with a Hectic Fever, which proceeded from the Pus retained in the Lungs. He had an almost continual Cough, no Spitting, but an extreme Difficulty to walk. His Tonils were large, his Neck full of scrophulous Tumors, two of which, near the Ears, were very hard, and full of Pain.

To stop the Progress of the Abscess, I ordered Venesection, under which the Boy almost fainted; this was followed by violent Fits of Coughing and Vomiting, which broke the Imposthume, and he threw up a little of the Pus or Matter. I remember the same thing happening several times

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before;

before; for when the Elasticity of the Part affected is restored by Bleeding, the Pus is presently ejected. I then gave him what follows:

R Sperma Ceti one Scruple, Salt of Nitre eight Grains, Coralline half a Scruple, Milk-water an Ounce and a half, simple Cinnamon-Water half an Ounce, Syrup of Balsam one Dram. Mix them for a Draught, to be taken three times a Day.

R Sperma Ceti one Scruple, prepared Pearls one Scruple, pearl Sugar half a Scruple. Mix them and make a Powder, to be taken Night and Morning in a Spoonful of Asses Milk, drinking after it a Draught of the same.

By these Means, and by gentle Riding, his Lungs were cleansed, and the Cause being removed, the Hectic Fever ceased: But a little Cough remaining, the Patient was removed to *Brighthelmstone*, a Town near the Sea, that he might be near the Remedy designed for the Cure of Obstructions. Then he first took a Purge of Glauber's Salts and Manna, and after pursued this Method.

R Of Æthiops Mineral twenty Grains, of Woodlice eight Grains, precipitated Sulphur six Grains, the Pulp of Cassia Fistula enough to make them into a Bolus; to be taken going to Rest, drinking half a Pint of Sea-Water the next Morning.

R Tincture of Woodlice prepared with Tincture of Salt of Tartar two Ounces. Take a Tea Spoonful an Hour before Dinner, every Day, in a Draught of Bristol Water, mixed with a little Rhenish Wine.

These

These Medicines gave him three or four Stools a Day, his Appetite returned, he began to improve in Flesh, and the Tumors of his Neck and Tonfils grew less. Soon after I ordered his Head to be shaved, his Neck to be kept uncovered, and the Tumors to be washed daily with the following Lotion :

R *Of Oil of Tartar per deliquium half an Ounce,*
Sea-Water one Pint. Mix it for a Lotion.

And by these Means the Tumors were dispersed by Degrees. Towards the End of their Dissipation I ordered his Neck and the Parts affected to be rubbed with *Quercus Marina*, [Sea-wreck,] newly taken out of the Sea, and moistened with its native Soap ; and thus the Tumors disappeared intirely. Then continuing to drink *Sea-Water* for three Months, I ordered him the Cold Bath. The Boy used to swim in the Sea with his Companions, and thereby grew stronger and better able to endure Labour, and having thus recovered his Health he departed.

I have treated this Case more fully, that it might appear at what Time of the Disease I used to prescribe *Sea-Water*, and to shew how convenient it is to use this Cathartic several Months. And it is to be observed that the Thirst which happens at first, after drinking the Water, generally goes off by frequent Use. This will suffice for the treating of the Glands of the Lungs in a State of Maturation. But it is to be noted, that unless the Pus is first thrown up out of the Lungs, the *Sea-Water* has very little Effect ; and except new Fluxions are prevented by a constant drinking it, the weak Parts cannot recover their

former State, and the Disease will necessarily be renewed.

C A S E II.

Of morbid Glands not suppurated.

A Servant of the most noble Duke of — came to me. He had a large Tumor reaching from the Ear to the Collar-Bone, which I suspected to be hereditary, because his Sister was afflicted in the same Manner; but because he had contracted a Hectic Fever by a wrong Use of Calomel, I sent him to *Brighthelmstone*; then after Bleeding eight Ounces, I gave him the following Medicines.

R *Æthiops Mineral two Ounces, prepared Woodlice two Drams and a half, burnt Sponge two Drams, precipitated Sulphur two Drams, Conserve of Whitlow Grass six Drams, solutive Syrup of Roses, enough to make it into an Electuary. The Quantity of a Nutmeg is to be taken Morning and Evening, drinking a Pint of Sea-Water after the Morning Dose.*

R *Tincture of Sal Tartar six Drams, Tincture of Saffron two Drams. Take a Tea-spoonful every Hour before Dinner in a Draught of old Hock.*

The concatenated Tumors of the Neck disappeared; the large Tumor, which was as it were the Root of the rest, grew less; but there remained a certain small Gland without any Pain, which was yet so smooth and polished that it seemed to be a true Schirrus. But the Patient not consenting to have it extracted, it began the next Spring to suppurate. Then the Imposthume

was

was opened by Mr. Mercer, a Surgeon; the Coat of the Gland was cleansed; and the Patient grew well, without any new Tumors yet appearing, though there is Danger of a Relapse.

C A S E III.

Of the Tumefaction of the Glands of the Knee.

I Was called to a certain Patient afflicted with a pretty large Tumor upon the Joint of the Knee, which had entirely withstood the Force of the common Method. His Habit was robust and fat; his Pulse calm, only a small Pain in the Part affected, which could not perform its Offices, because of the Thickness of the Joint and the Fluxion, which had continued for eight Months; but even this Person was cured by the following Method.

After Bleeding I prescribed an Emetic of *Ipecacuanha* and *Turpith Mineral* once a Week, and on the other Days the following Electuary with *Sea-Water*.

R *Of Vegetable Æthiops* [hereafter described] *three Drams, Cuttle-fish bone burnt three Drams, Coral-line half an Ounce, prepared Woodlice two Drams, Conserve of Whitlow Grass an Ounce and half, Syrup of the five opening Roots, enough to make an Electuary, of which take the Quantity of a Nutmeg twice a Day, drinking a Pint of Sea-Water next Morning.*

The Part affected was daily anointed with fresh *Ungent. Nutrit.* and as the Tumor grew less, he used cold bathing in the Sea, and a slight Friction of *Quercus Marina* to strengthen the Part. In

this Manner the Tumor was subdued, and the Man could walk without any Trouble.

C A S E IV.

Of the Tumefaction of the Glands on the Edges of the Eye-lids.

THE Inflammation and Soreness of the Eyes, which proceed from continual Fluxions on the Glands of the Eye-lids, are extremely troublesome to the Physician and Surgeon, whether they proceed from a strumous or scorbutic Cause. But because all these Disorders in general are cured by this Method, I shall only take Notice of the most difficult Cases of this Kind, where both these Disorders are united.

I was sent for to a Man two and forty Years old; he was afflicted with an Inflammation of the Eyes and a Lippitude, from a continual Fluxion upon the Glands of the Eye-lids. The Vessels of the conjunctive Membrane, or the White of the Eye, were swelled, so that they seemed to hang down, and had the Appearance of a *Fungus*: The Cornea began to be ulcerated. In this Case I ordered Bleeding three or four Times at proper Intervals; Issues were opened in the Nape of the Neck, and the following Method was entered upon.

R *Æthiops Mineral two Ounces, Vegetable Æthiops three Drams, Woodlice two Drams, red Coral prepared three Drams, Syrup of Violets enough to make an Electuary; of which take the Quantity of a Nutmeg Morning and Evening, drinking a Pint of Sea-Water after the Morning Dose.*

The

The Patient was of a strong Habit, and his Pulse quiet; and he bore the daily Evacuation without any Inconvenience. The Fluxion presently decreased, and by the aforesaid Prescription he was restored to Health. *Lommius* has observed, that the same Cases are frequently relieved by Nature. *A Flux of the Belly is good for those th. t are affected with a Lippitude.*

At length the Fluxion ceasing, he rubbed his Temples, Eye-lids, and Forehead every Day with *Quercus Marina* or Sea-Wreck, or washed them with cold *Sea-Water* for some Time after his Recovery, and he hath been free from this Disease seven Years; although before this Cure, upon taking any Cold it was wont to return. I have sometimes seen this Disease accompanied with an intermitting Fever, which could not be conquered without the Bark; but in the Case just now mentioned the Bark had little Effect. And there is another now present whilst I am writing, whom I formerly attended; he had a Fungus, that grew outwardly from the upper Eye-lid; the lower Eye-lid was turned back, and the Eye thereby covered. Afterwards, when the Flux of the Humours was diminished, I perceived the Coats of the Eye were ulcerated, and a *Lippitude* of both Eye-lids caused by the Excoriation. The Patient was cured by the following Method.

Take away twelve Ounces of Blood.

R *Of calcined Sponge, Cuttle-fish Bone prepared, of each half an Ounce, Woodlice prepared three Drams, Æthiops Mineral two Ounces, Conserve of Whitlow Grass ten Drams, Syrup of Violets enough to make it into an Electary; of which take the Quantity of a Nutmeg Morning and Evening, drinking a Pint*

of Sea-Water after the Morning Dose of the Electuary.

R *Tutty prepared, and Salt Petre, of each two Drams, Mucilage of Quince-seeds, enough to make it into a Liniment to anoint the affected Eye-lids every Day.*

C A S E V.

Of a scrophulous Ozæna, or fetid Ulcer in the Nostrils, with a swelling of the upper Lip, and scorbutic Eruptions upon the Cheeks.

A Certain Person came to me, who had before tried all that *Mercurius dulcis* and every other Medicine of that kind could effect alone ; but the Distemper was not at all mitigated hereby, but grew worse : For besides the *Ozæna*, certain Tubercles of the worst Colour began to appear near the Nose, Cheeks, and upper Lip ; the Nostrils were so stuffed, and so crusted over, that he could breath only through his Mouth. The Distemper was extremely difficult to be conquered, but yielded at last to the following Method, wherein I gave *Mercurius dulcis* in small Doses for some Months with *Sea-Water*.

R *Of Glauber's Salt one Ounce, dissolve it in an Ounce and a half of Milk-Water ; add to the Solution compound Piony-Water half an Ounce, Syrup of Violets half an Ounce. Mix them for a Draught to be taken in the Morning, with the proper Regimen.*

R *Of Vegetable Æthiops half an Ounce, prepared Woodlice two Drams, burnt Pumice-stone one Dram, Cuttle-fish Bone burnt two Drams, Æthiops Mineral two Ounces, Conserve of Whitlow Grass ten Drams,*

Drams, Syrup of Violets enough to make an Electuary. The Quantity of a Nutmeg is to be taken Night and Morning, drinking a Pint of Sea-Water after the Morning Dose.

The Patient grew better daily ; but when he was tired of this Electuary I perfected his Cure with the following Pills and Sea-Water.

R Of Camphire half a Dram, Viper's Flesh two Drams, Scammony sulphurat. one Dram and a half, Calomel one Dram, Syrup of Buckthorn enough to make them into Pills, ten Pills of every Dram ; of which take two every Night, or once in two Nights going to Bed, drinking a Pint of Sea-Water the next Morning.

Observe, that when the Cure of the Tumors was perfected, the Liniment of Sea-Water and *Quercus Marina* was used, to strengthen the Parts that were still weak.

C A S E VI.

Of various Foulnesses of the Skin.

I Was sent for to a Woman that was troubled with scorbutic Eruptions about the Ears and Face, which fouled several Linen Cloths every Day. The Eruptions were partly covered with a mealy yellow Crust. She had tried many Remedies but still grew worse: At length she came to live near the Sea, and there took every Morning antiscorbutic Medicines and the Sea-Water, and deterged the Skin with *Quercus Marina*, taken from the Shore, and by this Method in two Months Time the Woman grew well.

C A S E

C A S E VII.

Of a moist Leprosy.

A Woman of an extreme scorbutic Habit, had been affected nine or ten Years with a kind of moist Leprosy. Many skilful Physicians had endeavoured to extirpate the Disease, but with little Success. The foul Humours were transmitted plentifully thro' the Skin, and in a manner quite covered it, chiefly on the Face, Head, and Neck; besides which her Ears stood erect by Reason of their unusual swelling, so that they appeared like the Ears of the Satyrs, as they are fabulously described by the Poets. Lastly, her whole Frame was foul and nasty.

I advised the Use of Antiscorbutics with *Sea-Water*. The Distemper was conquered by Mr. *Newington*, Surgeon, whose Letter I received whilst I was writing. He commends the good Success of this Method, because, upon taking *Sea-Water* only two Months the Woman grew well, and to this Day, (it being now a Year since she was cured) she never perceived the least Signs of a Relapse. The Wife of Mr. *H.* a Sea Captain, was affected in the same manner, and cured by the Help of Alteratives and *Sea-Water*, as I am assured by Mr. *Snashall*, Surgeon.

C A S E VIII.

Of a dry Leprosy.

A Girl of twelve Years of Age was troubled with a dry Leprosy, the Top of her Head, and her whole Body was sprinkled over with
white

white *furfuraceous*, or branny Spots. I gave her the following Medicines.

R *Of Calomel six Grains, Camphire one Grain, Conserve of Whitlow Grass, enough to make a Bolus, drinking the following cathartic Draught next Morning.*

R *Of the Decoction of Senna two Ounces, Manna three Drams, Glauber's Salt two Drams, compound Piony-Water two Drams, solutive Syrup of Roses two Drams; mix for a cathartic Draught.*

R *Of Viper's Flesh one Scruple, Camphire one Grain, Conserve of red Roses, enough to make a Bolus; to be taken every Night going to Rest, drinking half a Pint of Sea-Water the next Morning, when the Calomel Bolus is not to be taken.*

Within fourteen Days the Eruptions began to scale off, and this most troublesome Distemper, in the second Month, without any other Help, was removed by this Method alone. Which Cure being talked of another Patient came to me, afflicted with the same Disease, and he was soon cured by the same Means.

C A S E IX.

Of a scorbutic Eruption, resembling a moist Leprosy.

F. P. whom I have mentioned before, had formerly a Disease of the Venereal Kind, and from the Time of its Cure had been in good Health till these Eruptions appeared. They were universal, and partly incrustated, and partly moist,
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First they seized his Head and Arms, and then the rest of his Body and Limbs, so that he could bear no Cloaths on. He was very poor, and was sent to St. Thomas's Hospital at London, under the care of a very skilful Physician. He underwent a Salivation by anointing; but as I observed before, he returned hectic and emaciated; the Eruptions were fretted and made worse by the Salivation. He was cured by the following Method.

R Of vegetable Æthiops three Drams, Flowers of Sulphur half an Ounce, Cuttle-fish Bone three Drams, Conserve of Mallows one Ounce and an half, Syrup of Violets enough to make an Electuary. The Quantity of a Nutmeg is to be taken every Night going to Rest, drinking a Pint of Sea-Water next Morning.

It appears very plain that this Distemper was not at all venereal, as was thought; because it was not palliated by Mercury, and because I neither prescribed Mercury nor Æthiops Mineral in the Cure afterwards; it is therefore easy to see what Power this Method hath in scorbutic Diseases, where Mercury fails of Success.

C A S E X.

Of a Gonorrhæa.

WHAT I am going to say of the Cure of this Distemper by *Sea-Water*, I do not very confidently advance, because I have but seldom treated it in this Method; yet I recommend it to the Consideration of Physicians, because I am apt to think that it will hereafter prove a most useful Remedy in these Cases.

I have given the following Medicines against a virulent Gonorrhœa.

R *Of Calomel fifteen Grains, Camphire three Grains, Pulp of Cassia Fistula enough to make a Bolus; to be taken going to Rest, drinking a Pint of Sea-Water next Morning.*

Thus the Acrimony was soon suppressed, taking also the following Powder two or three times a Day.

R *Of Sal Prunel. and white Sugar-candy, of each half an Ounce; mix them and take a Dram in half a Pint of Barley-water two or three times a Day.*

Afterwards the Cure was perfected by the Help of Balsam of Capivi and Loaf-sugar, tho' there seemed to be no Occasion for it, nor do I think it so necessary after this Method as after the common Way of Cure; for I know no other Benefit arising from Salt-Water than Purging; and as the Nitre in *Sal Polychrest* and *Sal Prunella* relieves the Strangury, so I think in like manner the Sulphur and Salt contained in *Sea-Water* are beneficial; at least the saline Purges do not augment the Inflammation, but rather restrain it. In the mean time, I confess, I have only treated two or three Cases of this kind.

C A S E XI.

Of the Humoral Rupture.

I Was sent for to a Person who laboured under an Humoral Rupture, which arose from the suppression of a Gonorrhœa; the Patient was cured in the following Method.

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Take away twelve Ounces of Blood.

R *Ipecacuanha twenty Grains, Turpeth Mineral three Grains, Conserve of red Roses enough to make an emetic Bolus, to be taken as Occasion requires, drinking a Pint of Sea-Water in the Morning of those Days when the Emetic is not taken.*

R *Of Bean Flour half a Pound, Sea-Water two Pints, boil them to the Consistence of a Poultice; adding towards the End Unguent. Nutrit. three Ounces; make a Poultice to be applied to the Part affected.*

The Tumor subsided, without leaving any bad Symptom: But as I observed before, these Remarks are not sufficient to establish this Practice, the Way is only opened for future Experience.

C A S E XII.

Of the morbid Uterine Glands.

I Lately cured an obstinate *Fluor Albus* with bathing in the Sea, drinking Sea-Water, and what follows.

Take away six Ounces of Blood.

R *Ipecacuanha thirty Grains, Carduus Water two Ounces, Oxymel of Squills one Dram. Make an emetic Potion, to be taken as Occasion requires.*

R *Of Spodium half a Dram, the Yolk of an Egg, with some of the White; small Cinnamon-water one Ounce and an half, strong Cinnamon-water half an Ounce, white Sugar-candy one Dram. Mix and make a Draught to be taken Morning and Night, drinking a Pint of Sea-Water once or twice a Week.*

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It is to be observed, that I used to prescribe purging with *Sea-Water*, as often as the Patient can bear it without Inconvenience, especially if the Belly is bound; I sometimes also prescribe the following Injection.

R *Balsam of Copaiba three Drams, dissolved in a sufficient Quantity of the Yolk of an Egg; Sea-Water one Pint. Mix them for an Injection.*

C A S E XIII.

Of a Tenesmus, with Ichorous Stools.

A Certain Woman, thirty Years old, laboured under a Suppression of the Menfes. Many Glands were morbid by the long Continuance of the Green Sicknes; she had œdomatous, or white, soft, and insensible Tumors on her Legs and Face; the Glands of the *Rectum* were so tumefied as to obstruct the Passage, and she suffered most grievous Pains in going to Stool; at the same Time there was a continual Discharge of Ichor, or a sharp sanious Humour, with a most painful Tenesmus, or a continual Desire of going to stool. The Woman was cured by the following Prescription, and the Menfes were restored, and became regular.

R *Precipitated Sulphur ten Grains, Vegetable Æthiops half a Scruple, Sperma Ceti one Scruple. Mix and make a Powder, to be taken Morning and Night, drinking a Pint of Sea-Water after the Morning Dose every Day.*

Because in this Case the hardened Glands of the *Rectum*, and the foul, sharp Humour created

ted a Suspicion of a Cancer, I think this Cure sufficiently shews the Virtues of Salt-Water in discussing recent Tumors of the intestinal Glands; for the Woman by the Help of it was freed from a very bad State of the Blood, and from many Obstructions: From whence we may conclude, without Rashness, that the *Sea-Water* helps by other Means as well as by Revulsion.

C A S E XIV.

Of a fixed scorbutic Rheumatism in the Feet and Knees.

THE Captain of a Ship, who was of a full Habit was afflicted many Years with Fits of the Gout, and a scorbutic Rheumatism, by which the Joints were grown stiff, and the Glands distended by the long and frequent Fits; his Legs and Thighs were so swelled with the Scurvy, that he could scarcely crawl. I prescribed him an Electuary of Æthiops Mineral, Gum Guaiacum, compound Powder of Arum, &c. to be taken daily with *Sea-Water*; the Patient by these Means recovered, and the Thickness of the Joints was diminished; from hence it appears, by what Means *Sea-Water* begins the Cure; that is, by opening a new Secretion, and by alleviating the morbid Part.

C A S E XV.

Of the Tumefaction of the Glands in the Neck, with an Ulcer in the Wrist.

THE Virtue of this Remedy in Ulcers accompanied with any Fluxion, will appear by the following Cure. A certain Person had an ulcerated

ulcerated Tumor on the Joint of the Wrist, and the Glands of his Neck were scrophulous; but he recovered by taking an Electuary of *Æthiops Mineral*, and by purging with *Sea-Water*. And this Remedy is so certain a Cure, that Mr. *Webb*, a Surgeon of *London*, whom I have mentioned in another Place, in a Letter I lately received from him, amongst other Things, writes thus: *But this I affirm from certain Experience, that where the Disease is settled upon the Bones of the Wrist, or the Ankle, this Method is always successful; and further adds, That he had seen an obstinate Disease of the Arm cured by the same Method.*

But when the Fluxion is removed from the affected Part, it sometimes falls upon another; and this happened in the Patient above mentioned; for when he was cured, a large, hard Tumor began to rise in the inner Part of his Knee, but he was relieved by the same Medicines as before, though the Tumor was almost as hard as a Bone; and I remember almost the same Thing happening to another Patient under the Care of Mr. *Mannings*, a Surgeon.

C A S E XVI.

A Gentleman of a good Family came to me by the Advice of the ingenious Mr. *Saint-hill*, to try the Effects of *Sea-Water*; he had a large Tumor behind the Ear, and several hardened Glands in his Neck. Before he came to me, he had regularly tried all Mercurial Medicines in vain; but there was something more to be conquered than has been mentioned above; for in the largest Tumor there was an Ulcer; I prescribed Alteratives with *Sea-Water*, and an Em-

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brocation with the marine Fucus to dissolve the Schirrosities ; in three Months Space the Tumors of the Glands disappeared, and towards the End by bathing in the Sea, the Patient was restored to Health ; but as there was an Imposthume in this Case, I suspect a Return of the Distemper.

C A S E XVII.

MR. Webb, a Surgeon in *London*, sent a young Man to me, the Glands under whose Collar-Bone were tumified, one of which that was most swelled was as big as a little Egg ; and near it, one of the Tubercles was broke, the Pus being matured ; the eminent Surgeon before mentioned, ordered the Wound to be dressed with Lenients ; when the Patient had taken *Sea-Water* with Alteratives for two Months, he went away cured ; bathing in the Sea at the latter End of the Time. There was not the least Tumor remaining, nor any Marks of the Disease ; except that where the Tubercle was broke, there remained a little Hardness, which might perhaps hereafter prove the Seat of a new Imposthume ; for I have observed, that the Sores of the King's Evil often return near the old Scars, till the Capsula of the Gland is quite eaten away by the Pus, and is cleansed.

C A S E XVIII.

Of a dry furfuraceous or branny Leprosy.

A Certain Person came to me with a dry, furfuraceous Leprosy ; there were several Clefts in his Hands, and his Nails were bent, and the Disease

Disease prevailed from the Top of the Fingers to the Wrists; he had tried many Remedies without Success, and among the rest *Sea-Water*; but by the Help of vegetable *Æthiops*, *Vipers Flesh*, and *Antiscorbutic Juices*, the Force of the Distemper was broken. Indeed, many Diseases of the *Serpiginous* Kind will not yield to *Sea-Water*, unless continued a long Time; but few can resist its whole Strength. However, I seldom thoroughly experienced the Power of this Remedy in these Cases, because most Patients are tired with the Tedioufness of the Cure.

C A S E XIX.

ALthough certain cutaneous Eruptions before mentioned are not easily cured by *Sea-Water*, yet I saw one of my Relations cured by this Method. He was troubled with an Herpes of a bad Colour, inclining to be brownish, which had fixed on his Face all the Winter. Early in the Spring, by Order of my Friend, the celebrated Dr. *Wilmot*, he took an Electuary of Antimony, &c. twice a Day, and *Sea-Water* next Morning; the Power of the Remedy exceeded our Hopes; for the Patient was soon restored to Health, although he had taken *Viper's Flesh*, &c. the Winter before in vain; indeed from that Time, I ordered him to take alterative Medicines at four in the Afternoon, and going to rest, because they ought to be allowed to exert their Virtues before they are discharged by Cathartics.

C A S E XX.

A Girl living at *London*, about fourteen Years of Age, was troubled with hardened Glands in the Neck and Arm-pit, with an Imposthume in both Places; having taken Calomel for some Time, she was attacked with a Hætic Fever, and a Cough; she came into the Country, and changing her Medicine, she took *Æthiops Mineral*, &c. with Lime-water and Sea-water, at proper Intervals; in the Space of two Months the Cough, the hætic Fever, and the ulcerated Glands, were cured, and she returned to *London* fatter, and of fresher Complexion.

C A S E XXI.

There is brought to me, while I am now writing, a recent and most melancholy Case of the *Rectum* or strait Gut, and of the lower Belly, with morbid Glands, which occasioned a bastard Iliac Passion in a Woman I had seen a little before; they thought she was big with Child, when she only laboured under a Suppression of the Menfes for about ten Months, upon examining the Abdomen, it seemed to me to be composed of a certain Collection of morbid Glands, which by the Afflux of Humours, during ten Months, was grown to that Bulk, that it shut up the Passage of the *Rectum*, so that there was no Vent for the Excrements but by vomiting. But I have subjoined the Description of Mr. *Maynard* the Surgeon, who saw her dead (*December 13, 1748.*) The woman, says he, died the *Thursday* after you saw her; I inspected her after her Death,

Death, and cut out the Tumor of the Glands, which was six Inches long, and about ten or twelve in Circumference; it weighed almost three Pounds. There was also another Tumor larger than the other, by which the Passage of the Rectum was so obstructed, that it was impossible there should be any thing excreted. I saw also another Case of the same Nature in a Man, in whom the Passage of the *Rectum* was so shut up, that a small Candle could not be thrust upwards above three Inches; nothing passed by Stool for the Space of forty Days; we sent to *London* for Advice in this Case, and Quick-silver was prescribed, of which he took altogether three Pounds; in the mean time nothing passed by Stool but the Quick-silver, every Thing also came upwards; during all that Time, he had no Fever; at length, the Lungs begun to be inflamed, and the Inflammation occasioned Death.

C A S E XXII.

Of excoriated Breasts.

THE Menfes failed a certain Woman of a very full Habit, almost forty-nine Years old, the Spring after this Suppression a Flux of Humours fell upon her Breasts, which was so copious and sharp, that they were both excoriated; but there was no Hardness of the Breasts, tho' they were of an unusual Bigness; the Glands of the Skin were grievously affected, and there was a Tubercle, something hard, of an inauspicious Colour, upon the left Collar-bone.

Although these Signs portended little Good, yet I undertook to remove the Fluxion with *Sea-Water*, and entered upon this Work in the following Manner.

Take away sixteen Ounces of Blood directly.

R Of Glauber's Salt one Ounce, dissolved in Milk-Water one Ounce and a half; compound Piony-Water, half an Ounce, Syrup of Violets, half an Ounce; mix them for a purging Draught, to be taken in the Morning.

R Of *Æthiops Mineral* two Ounces; Woodlice prepared, two Drams; burnt Sponge, two Drams; Conserve of Whitlow Grass, ten Drams; Syrup of Violets, enough to make an Electuary, of which take the Quantity of a Nutmeg, Morning and Evening, drinking a Pint of Sea-Water early in the Morning every Day.

We took Care to have the excoriated Parts anointed, with a Feather dipt in Unguentum Nutrit. and applied Dr. Turner's Cerate of Lapis Calaminaris between the Breasts, to prevent the spreading of the Excoriation.

By these Means the Flux, which gave Signs at first of being very difficult to cure, was stopt in less than two Months; the natural Shape of the Breasts was restored; nor was there one cutaneous Gland which appeared to be hard. The Tubercle of a bad Colour mentioned above, which was plainly of a cancerous Kind, as far as I could see, was neither better nor worse; but continued for several Years with little or no Alteration.

CASE XXIII.

Of a hectic Fever proceeding from Pus retained in the Lungs.

A Girl about twelve Years old came to me afflicted with a hectic Fever and a hard and weak Cough ; her Belly was tense and hard ; her Urine of a whitish Colour, whence her Parents judged her Illness proceeded from Worms ; therefore, before she came to me, they had given her Æthiops Mineral, Calomel, and Hellebore, and earnestly entreated me to agree to the Method of *Sea-Water*. But I judged that the Child's Health was impaired by the Pus detained both in the Lungs and Mesentery ; because I observed some Glands in her Neck tumefied with a Kind of Knots ; and also, that the Fever was attended with frequent Fits of Shivering ; so that there was little Cause to expect any Relief from Physic, the *Pus* being already generated.

At length being doubtful, I yielded to the Use of *Sea-Water*, which presently purged her without much trouble, but without any Appearance of Amendment ; for the hectic Heat, and the other Symptoms (as I suspected) grew worse. Fearing they might be heightened by this Method of Cure, I forbid her the Use of *Sea-Water*.

Continuing much in the same State ; she soon after went to *London*, but by the Advice of the Physician she consulted, she returned as soon as possible into the Country, where she died about two Months after ; at which Time I was called, for the sake of inspecting the Cause and Origin of the Disease.

The whole Lungs were beset with small matured Glands, and appeared much like the Lungs of the measly Sow before mentioned, but the larger Branches of the Windpipe were yet free from Pus, whence no purulent Spitting accompanied this Disease; I found the Liver whole and sound, but the Mesentery was sprinkled with morbid Glands, of which several were matured.

C A S E XXIV.

Of a Colic with a Constipation of the Belly.

I Was sent for to a poor Fisherman, who was troubled with a very painful Colic, his Belly being also bound. I prescribed as follows :

Take away eight Ounces of Blood.

R Flowers of Camomile, one Handful, boil them in a Pint and half of Sea-Water to a Pint, and strain it for a Clyster, to be given immediately.

I persuaded him after the Clyster, to take a Draught every four Hours made with Oil of Sweet Almonds and Manna, till he had a Stool; but as I heard afterwards, the Draught was omitted, because the Patient found the Clyster alone had a sufficient Operation.

C A S E XXV.

Of a Jaundice.

A Lady had been afflicted above a Year with the Jaundice, and with frequent Fits of a very violent Cholic from the same Cause; she
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went to *London* to consult the ingenious Dr. *Lee* in this Case ; she returned from the Town, the Violence of the Disease being nothing abated, for her Urine was almost black, and her whole Skin was of a livid Complexion. She had carefully tried every Medicine usually prescribed in these Cases ; at length, by my Advice, she came into the Neighbourhood of the Sea, that she might join the Use of *Sea-Water* with *Venice Soap*.

R *Venice Soap* three Scruples ; *Salt of Hartshorn*, six Grains ; *Syrup of the five opening Roots*, enough to make a *Bolus*, to be taken two or three Times, drinking a Pint of *Sea-Water* every Day early in the Morning.

Thus the Passage of the Belly was kept open ; the Colic very seldom disturbed the Patient, and the natural Colour of the Urine returned ; she was remarkably relieved in a most obstinate Distemper, and at length restored to Health.

C A S E XXVI.

I Remember a Case not unlike the Fifth, that was under the Care of my honoured Friend the celebrated Sir *Edward Hulse*, Bart. A Girl eleven Years old had her Upper Lip and Nostrils swelled ; but upon taking *Sea-Water* the Tumor disappeared ; the Disease returning next Spring, she went to consult Dr. *Hulse*, who advised her to repeat the Use of *Sea-Water*, and prescribed the following Medicines, which she took in Whey while she continued in *London*, and afterwards in *Sea-Water* at *Brightelmstone*.

R *Burnt Sponge*, one Scruple ; *Rhubarb*, four Grains ; mix and make a Powder to be taken Morning and Evening,

Evening, drinking after it a Draught of Whey, sweetened with Syrup of Violets.

And this was all she took with *Sea-Water*, and which were repeated the second Spring after the Cure was undertaken; thus by their Assistance, we always suppressed the Tumors, till about the thirteenth Year of her Age, she had the usual monthly Evacuation; and from that Time, she has never been troubled with the *Ozæna*, to my Knowledge; nor with the Tumor of the Lip.

C A S E XXVII.

Of a dry Leprosy.

MR. —, Captain of a Ship, a few Years past, was sent to me by my Friend the ingenious Dr. *Oldfield*, who had used his utmost Skill to conquer the growing Disease by the Help of Mercurials; but these Medicines proved of little Use, a dry Leprosy possessed both Arms as high as the Elbows, and almost an innumerable Quantity of leprous, yellow, furfuraceous or branny Spots appeared all over his Body; all which I took off in less than two Month, except one Spot still remaining upon one of his Arms, when the Ship went to Sea; but I know not what happened to him afterwards. I prescribed thus:

R Æthiops Mineral, an Ounce and half; Antimony perfectly levigated, half an Ounce; Cuttle-fish Bone, three Drams; Woodlice prepared two Drams; Conserve of Paronychia, ten Drams; Syrup of Violets enough to make an Electuary, of which take the
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Quantity of a Nutmeg twice a Day, drinking a Pint of Sea-Water every Morning early.

I judge this Cure to be doubtful; because I have often observed this Distemper return, till the Glands of the Skin had recovered their Powers, or till the whole Habit of the Body is changed by *Sea-Water*.

CASE XXVIII.

Of cutaneous Eruptions, with the Menfes suppressed.

A Young Woman unmarried complained of Eruptions upon both her Legs, which used to rise every Month in a Swelling, and spread wider in the Manner of an Erysipelas, till upon the bursting of the little Vesicles, or Blisters, there followed a great Flux of a ferous or watery Humour.

This Disease appeared in the twenty-second Year of her Age: Before that Time her Menfes were regular, but they ceased entirely afterwards. I attempted the Cure in the following Manner.

Take away ten Ounces of Blood.

R *Ipecacuanha, twenty Grains; Turpeth Mineral, three Grains; Conserve of Roses, enough to make an Emetic Bolus, to be taken once a Week.*

R *Vegetable Æthiops, six Drams; Woodlice prepared, two Drams; Cuttlefish-Bone burnt, two Drams; red Coral prepared, three Drams; Conserve of Paronychia, ten Drams; Syrup of Violets, enough to make an Electuary; the Quantity of a Nutmeg is to be taken twice a Day, drinking a Pint of Sea-Water early every Morning.*

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By this Method, the true Period of the Menfes was restored ; but the Fluxion on her Legs continued violently, and the Valvulæ of the Veins were so *varicose* (swelling ready to burst) that frequently before the Eruption of the Menfes, a new Flux of Humours used to invade her Legs. At last I advised her to bathe in the Sea, and use proper Bandages upon the affected Parts ; she went out of my Neighbourhood, and I know not what happened to her afterwards ; but I thought proper to insert this Case, chiefly because I have observed as in this Woman, so in many others, that the Menfes flowed after the Use of Vegetable *Æthiops* and *Sea-Water* ; and especially whenever I prescribed small Doses of *Mercurius Dulcis*, to be taken over Night before the Morning's Draught of *Sea-Water*.

C A S E XXIX.

Of an Erysipelatous Crisis.

AS I chiefly intended this Work to illustrate that Method in which the glandular Secretions may be directed by the *Sea-Water* ; I have scarce taken any Notice of the Use of this Remedy in certain chronic Diseases of the most stubborn Kind, but have confined my Remarks within the Bounds which I had prescribed to myself ; passing over in Silence some extraordinary Instances of this Matter (that is of the great Efficacy of *Sea-Water* in chronic Diseases.) But in these Distempers, we are principally to remember and observe in them all, at all Times, that if there are any Separations made of the Humours from the Blood, which have fallen upon any Part
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for a long Time; these Humours must be suffered to cleanse and discharge themselves by the old and usual Way (if it may be done without any great Inconvenience;) but if it is necessary to make some Change, and draw off the Humours another Way, we must remember, that some new Evacuation must first be effected; for if it is true, which I often mentioned, and have before endeavoured to demonstrate, *viz.* that the Physician has a certain Power and Authority in restraining and directing Nature, it follows, that wherever he sees her going wrong, and forming a Crisis by the most dangerous Way, he should take upon himself the Government of the Crisis, and direct it in a safer Way.

And nothing, in my Opinion, will procure more Honour to the Physician, than if he follows Nature as a Guide and Teacher, and observes, with the greatest Care and Judgment, all her Motions and Changes; and whenever he finds her going wrong, properly exerts his Power of directing and restraining Nature: and takes, as it were, the Reins in his Hands, of the exacerbent Disease, and rules by his Judgment the important and hazardous Moment of the approaching Crisis, since upon this depends the Life or Death of the Patient.

A certain Person was seized with an Erysipelatous Quinsey; the Glands of the Uvula, the Throat, and Tonfils, were inflamed, and extremely red; there was a Tumor about the Larynx, or Top of the Windpipe, and thence a Hoarseness; his Respiration was difficult and quick, which would not suffer him to lie down; his Pulse very quick and strong.

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In this Disease, Nature seemed to me to be endeavouring at an internal Crisis, which, if it had broken out in the Glands of the *Trachea* or Wind-pipe lower down, it would have been a Wonder if the Patient had escaped Death; because, in this Extremity, if I had left the Disease to the Direction of Nature, an internal and fatal Crisis would certainly have ensued; therefore, I used the utmost Endeavours to turn the Disease another Way. *First*, I ordered Bleeding, to the Quantity of fifty Ounces, at proper Intervals, and a daily Purge of Glauber's Salt; the internal Fluxion was soon suppressed, the Respiration was less quick and difficult; nor were the Glands so red, nor the Tumor of the Tonsils so troublesome; but the Fever, tho' something abated, was not entirely ceased.

Then I first perceived a certain red, erysipelatous Spot appearing on one Side of the Nostrils; afterwards, other Spots spread on the Forehead, Cheeks, Face, and the whole Head. At the same Time his Eyes were almost hid by the Greatness of the Swelling, and the Patient was restless and uneasy at my ordering so few Medicines, but when the Danger was over, that I mentioned in the first Part of the Case, and there was no Delirium, and the Fever was much abated, I judged it best to leave the Disease to the Strength of Nature; therefore, using no Medicines till the Swelling subsided, except a few cooling Purges, I recovered the Patient; and this Example will, I think, shew the great Consequence of a due Direction of the glandular Secretions.

CASE XXX.

Of a moist Leprosy.

A Gentleman came to me complaining greatly of a moist Leprosy, which was grown to such a Height, that it used to emit little Drops of a Humour like little Tears, upon the slightest Touch of the Finger. It was accompanied with such a violent Itching, and so troublesome, that the Patient could scarce get any Rest Night or Day. The Distemper spread downwards from the Groins over the Inside of both the Thighs; and on both Sides of the Neck; from the Ears down to the Collar-Bones, and also on the Bend of both Arms. The Disease was of long Standing and deeply rooted, so that although the troublesome Itching ceased, and the Fluxion was stopt by the Use of *Sea-Water*, and the Parts affected began to cool and grow dry; yet the evacuating Tubes of the Glands were so enlarged, and the Tone of the cutaneous Glands so broke and weakened, that the Distillation of the Humours returned, after the Patient left off *Sea-Water*, and flowed like a simple Gonorrhœa; but though not so copiously as before, and without any Itching; yet through the Debility of the Glands, it continued for some Time.

I persuaded him to take Lime-Water, and the antiphthific Tincture of *Etmuller*, or in their Stead, for the Sake of Variety, Medicines consisting of *Vitriolics*, and the *Peruvian Bark*; but how these Medicines operated, I cannot tell, as it is now a long Time since I heard of the Patient; but this I am sure of, that in some Diseases where
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the Glands are greatly weakened, that no Remedy can give Relief.

Sometimes the internal Use of Tar may perhaps shut up the open Mouths of the Glands; but this is not to be reckoned a lasting Cure; although in some of these Cases, where the Glands are affected with a Distillation of Humours, I judge Tar-Water may be beneficial, because this Medicine has a digestive Quality like Turpentine, and helps to close the open Mouths of the Vessels; but, I confess, I have had very little Experience of its inward Use; but I often used to apply an Ointment of Tar outwardly with good Success: I subjoin the best Form hereof, which I have often given, with a happy Event, after I had tried all others in vain.

R *Sheeps Suet and Tar, of each six Ounces; Powder of Elecampane Root, two Drams; the inner Bark of Elder, half an Handful; let them boil together till the Elder Bark grows crisp, then strain it.*

The affected Parts are to be anointed herewith, rubbing it in before the Fire Morning and Evening, every Day till the Eruptions are cured.

C A S E XXXI.

Of a Scrophulous Caries for Rottenness of the Inner-Bone of the Ankle.

J *Anuary, 1748, there came to me, the Beginning of this Year, a young Man, eighteen Years old, Brother to him mentioned in the Letter to Dr. Lewis; he laboured under an hereditary*

tary King's Evil; his Pulse was quick, and his Habit hectic, he not only had several hardish Tumors on the Glands of the Neck, but also an Abscess on the inner Bone of the Ankle, the Heads of the Bones were swelled, and the Joint much larger than it should be; first of all, the Pus was let out by a Surgeon; and against his other Complaints, I prescribed as follows:

R *Of Vegetable Ethiops, six Drams; burnt Sponge, three Drams; Woodlice prepared, two Drams; Ethiops Mineral, two Ounces; Cuttle-fish-Bone burnt, two Drams; Conserve of Paronychia, ten Drams; Crabs Eyes, three Drams; Coralline prepared, two Drams; Syrup of Violets, enough to make an Electary; of which take the Quantity of a Nutmeg at Four in the Afternoon, and at going to Rest, drinking a Pint of Sea Water next Morning.*

The young Man came to me about the Beginning of March, to shew me the Exfoliation of the Bone; the Ulcer was entirely healed, the Joint and Heads of the Bones were restored to their natural Shape; and the Tumors of the Glands of his Neck were dispersed by the Method before prescribed.

C A S E XXXII.

Of a large scrophulous Tumor, reaching from the Ear to the Collar-Bone,

ALTHOUGH I mentioned an Example of this Kind before, yet as this Patient took Sea Water several Months, I was willing to insert the Case, that it might be a Confutation of those Persons, if there are any such, who condemn the

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long

long Use of *Sea Water*, as being too strong a Medicine.

The Woman in the present Case, took twenty-five Gallons of *Sea-Water*, not at stated Intervals, but in one continued Course of purging, at a Pint every Morning (which makes in all 200 Pints) and while she was drinking it, she had her monthly Periods more regular and better coloured; a keener Appetite, and the strumous Swellings were dispersed; but if this vast Quantity of *Sea Water* drank, (which was followed by the Cure of the strumous Swellings, and a better State of Health than before) does not procure and demonstrate its harmless Virtues; I fear there will never be any Argument strong enough to remove the unjust Prejudices of some People *.

C A S E XXXIII.

Of the Shingles.

THERE is a very common Species of the Erysipelas, which is called by the *Greeks* *Zoster*, by the *Romans* *Zona*, and in our Country, the

* In the Voyage of *W. Schouten* round the World, the Author speaking of the Inhabitants of an Island in the *South Sea*, has these Words “*Nous vimes qu'ils be-
voient de l'Eau marine & en donnoient aussi à leur pe-
tits Enfants; chose que nous sembloit contre Nature.*” That is, We observed that the Inhabitants of this Island drank *Sea Water*, and likewise gave it to their Children; a Practice which seemed to us contrary to Nature. This will serve to confirm what the Author has asserted concerning the harmless Qualities of *Sea Water*. However I believe it is the only Instance we have of its being drank in this Manner. It is to be found in p. 112. of the *Paris Edition* in 1618.

Shingles;

Shingles; which Distemper infects the Trunk of the Body, sometimes attacking the Breast, sometimes the Shoulders, and sometimes the Sides and Ribs; it often appears lower, and encompasses the whole Body like a Girdle; it is attended with little Blisters or Vesicles, sometimes yellowish, but oftner of a livid Colour, which are of a corrodng Nature like the Herpes, or Ringworm, which Species it greatly resembles.

This Distemper always seems to me, to be a Kind of Scorbutic Erysipelas, or *St. Anthony's Fire*, inclining to a Ringworm, by a degenerate Mutation. Therefore, I treat it by a Method something different from that of the true Erysipelas; and have observed some very troublesome Accidents happen from a too hasty repelling the Eruption; I find the vulgar Opinion, that it is mortal if it goes quite round the Body, was received by the Antients; nevertheless this Event of the Distemper is not always true; but in curing this Species of the *Erysipelas*, two Things are chiefly to be observed; one is, that we should forward the Maturation of the little Ulcers; the other, that we should forbear Purging till the Eruption is evacuated by the Skin; then indeed the Belly is to be loosened by *Glauber's Salt*, or *Sea Water*. But I chuse to add a Case of this Distemper.

A Gentleman about fifty was seized with a Scorbutic Erysipelas, or rather with a Kind of degenerate Ringworm. The Eruptions covered the Chest and the Space under the right Nipple; the Heads of the Pustules were of a livid Colour; he suffered great Pain, and had a slight Fever: But when the Pustules had continued about three Days, and new ones appeared, a Surgeon thought fit to apply a Cerat to the Eruptions, which, in-

stead of forwarding the Maturation, only increased the Pain, and they emitted nothing but thin Ichor, and that in small Quantity. At last the greatest Part of the Eruption disappeared, and the Patient was waked out of his Sleep by a sudden Fit of an Asthma, which was very near killing him. Immediately a Surgeon was sent for, who lived in the Neighbourhood, who bled him. After Bleeding, the Fit of the Asthma was a little mitigated, but returned soon after, when the Patient was asleep, with a very violent Attack; then I was sent for, and found the Patient something easier, having left his Bed; but even then he complained of a great Pain and Tenderness of the little Ulcers that could not bear being touched. Upon inspecting them, I found the little Blisters were sunk and turned of a livid Colour, containing a sharp Ichor. The little Blisters were presently cut, and cured by red Precipitate with *Unguent, Aur.* applied with Cerate to keep them from moving; and I ordered a Julep with *Gascoign's* Powder to be taken when he was faint, or had a Sickness of the Stomach. Further, a pretty large Blistering Plaister was applied at Night, but waking as before with a *Dyspnœa*, or a Difficulty of Breathing, the Patient was obliged to get up.

The next Day we found the Blister had drawn plentifully, so that from that Time he had no fresh Attack of the *Dyspnœa*, and the Pain was not so violent; the Eruptions also began to tend towards Maturation. Then he was purged with Manna and *Glauber's* Salt, and took afterwards an Electary of *Æthiops* Mineral and compound Powder of Arum, &c. purging every other, or every third Day with *Sea Water*.

By

By these Means the Patient grew well without any Return of the Asthma, and only complained a little of a Tendernefs, that would not bear touching, in the Parts lately affected by the Distemper, which I observed generally happens in most of these Distempers; but I used to cure this Tendernefs by the following Embrocation, and by the Use of Antiscorbutics.

R Of Camphire, one Dram; Spirit of Garden Scurvy-Grass, half a Pint; mix for an Embrocation,

The affected Parts are to be fomented and rubbed Night and Morning, with a Sponge wetted in this Embrocation; and the Belly is to be kept open with the following Electary.

R Of Æthiops Mineral, two Ounces; Compound Powder of Arum, three Drams; Crabs Eyes and prepared Coral, of each two Drams; Syrup of Violets, enough to make an Electary. The Quantity of a Nutmeg is to be taken Morning and Evening, drinking a Pint of Sea Water every other Morning.

But it must be observed, before I finish this Case, that the most convenient Time for Purgatives is generally when the Heat, Thirst, and Restlessness are abated, which seldom happens till after the Eruptions are matured. But as these Eruptions are critical, they are accompanied with more Danger if they strike inwards, than those Diseases of the Skin which are not attended with a Fever.

Lastly, Observe, that if the Disease encircles the Waist like a Girdle, then it is to be treated like the Case now mentioned. When I found

any very bad Symptoms, where the Disease possessed the Chest, or any other upper Parts of the Body, I took my Measures according to the Parts affected.

C A S E XXXIV.

A Man forty-four Years old, was troubled with hard scrophulous Tumors upon both Knees, and the same scorbutic Disorder upon his right Wrist: In this Extremity he had Recourse to Salivation, but without any Benefit. At last he came to me, and by my Advice went to *Brighthelmstone*, where, for four Months, without any Intermission, he drank a pint of *Sea Water* every Morning.

When the Tumors began to decline, he went into the Sea as a Cold Bath, and went away restored to his Health; but there remained in one of his Knees an *Anchylosis*, or Stiffness of the Joint, which was formed before he came to me; and was the Cause of his walking with great Difficulty, leaning upon two Canes. But before he went away, the Knee that was so stiff, began to be a little flexible, insomuch that he could walk with the Help of one Cane only.

C A S E XXXV.

— **S**CORBUTIC Eruptions, which seemed to be a Kind of moist Leprosy spread all over the Body, and wherever the Cloaths touched the Skin, they stuck so close, that upon being pulled off, the Blood followed in several Places. There was room to suspect this Case was not free from a Venereal Taint; and therefore the Patient had tried Salivation, tho' to no Purpose. Afterwards
he

he came to the Sea in this Neighbourhood, and entered on a Cure in the following Manner.

R Of Æthiops Mineral, one Ounce; Crabs Eyes, six Drachms; Crude Antimony prepared, two Drams; Vegetable Æthiops, two Drams; Powder of Vipers, two Drams; Syrup of Violets, enough to make an Electuary, of which take the Quantity of a Nutmeg Morning and Evening, drinking a Pint of Sea Water early every Morning,

He took these Medicines two Months, and towards the End of the Cure I added;

R Tincture of Antimony, Balsam of Gum Guaiacum, of each equal Parts. Take 30 Drops three Times a Day.

Thus the scorbutic Eruptions were not only cured, but also a Rheumatism, which had seized him after the Salivation.

C A S E XXXVI.

— **A** Dry Leprosy seized on the Head and almost all the Joints, the Body being sprinkled over with Leprous Spots. This was a most troublesome Case, and which could admit of no Cure without a steady and a long Course. The Patient continued to drink a Pint of *Sea Water* every Morning during nine Months, without any Intervals, and patiently bearing the Tedioufness of the Cure, recovered his Health.

C A S E XXXVII.

— **A**N Erysipelas possessed both Thighs, and the Tension of the Vessels was surprizing, and the Blood was so tinged with Bile, that upon pressing the Skin with the Finger it seemed not so much of a Saffron, as quite of a Golden Colour.

The Patient took only a Pint of *Sea Water* every Morning for seven Days, and all the Tumor being suppressed, the Patient recovered without any other Assistance.

*D. Turner, Apothecary,
at Brighthelmstone.*

C A S E XXXVIII.

Of a Scirrhus of the Liver.

A Certain Person came to me greatly complaining of a Scirrhus of the Liver. The Tumor was hard, large and uneven; his Eyes tinged with a Suffusion of a Saffron Colour, and his Skin sprinkled with itching Eruptions. In this Extremity the Patient had Recourse to the Use of *Sea Water*, by the Help of which the Jaundice and the Eruptions of the Skin were much relieved, but the Scirrhus of the Liver continued in the same State after the Use of *Sea Water* as before; and indeed I have never any Hopes of Relief from *Sea Water* in a perfect Scirrhus, as I observed before in the Patient that was shewn to Dr. *Johnson*; for in that Case the Disease of the Skin alone was dispersed by bathing in the Sea, and other Assurances, the grievous Disease of the Liver continuing the same, But in these Cases, which are more troublesome,
from

from various Disorders I have found not a little Help from Tartar Vitriolate; yet, whenever it is used, Care must be taken that the Tartar Vitriolate is not made too acid; to obviate which Inconvenience, I often use to mix with it some Salt of Tartar, rising by Degrees from small to larger Doses, according as the Stomach of the Patient would bear it.

C A S E XXXIX.

Of the American Scrophula or King's-Evil.

A Boy entering upon his thirteenth Year, who was a native of *Jamaica*, was sent by his Friends to *Brighthelmstone*, to be under my Care. His Neck was full of scrophulous Tumors; his Head also was strangely overspread with Tumors resembling a king of a *Fungus*, of a dark brown Colour. The Bottoms of the Tumors, or rather their Roots, were firmly and deeply inserted into the Pericranium, and their Heads were softish and uneven, presenting to the Eye a Sort of Pits like Sponge, and bleeding upon the slightest Touch. I prescribed the Use of the Ointment of Tar before-mentioned, having premised Venæsection; then he continued taking an Electary of Vegetable *Æthiops*, together with *Sea Water*, every Morning for four Months; by this Method the Tumors, both in his Neck and Head, were entirely dispersed and healed; yet there remained deep Scars in his Head as Signs of the Loss of Flesh by the corrosive Ulcers.

A P H O R I S M S.

1. *NATURE* is the Healer of Diseases.

2. A Physician, therefore, should always have his Eyes upon her as the surest Guide, and tread in her Steps.

3. Those who labour under Glandular Diseases before Years of Puberty, both Men and Women, often grow well afterwards; the last by the breaking out of Monthly Purgations; the the first by the Change of the Constitution.

This appears more clearly, because young Bachelors are often troubled with the King's Evil, who sometimes upon marrying are cured spontaneously; the Matter that before flowed to the strumous Tumors, being now diverted to other Parts. Wharton de Glandul. p. 247.

4. If obstructed Glands in Women are not cured before the 45th Year of their Age, or thereabouts, then the Disease is renewed upon the ceasing of the Menfes.

5. But those, who are troubled with obstructed Glands, if they are put under the Care of a skilful Physician, before the Age of Puberty, may for the most Part be preserved from the Generation of Pus, by a due Treatment of the Glandular Secretions; but when they have attained the Age of Puberty, Nature generally finds some Means to help herself, till she is oppressed with the Burthen of old Age.

6. Those Glands, which do not adhere strongly to any Part, nor are painful, nor are grown hard with repeated Inflammations, and have again subsided, are chiefly curable by *Sea Water*.

7. If

7. If a morbid Gland, either of the Lungs, or of any other Part hath proceeded to Maturation, there *Sea Water* is of no Use, till the retained Matter is discharged.

8. In tumified Glands, when the Parts have cohered so long and so firmly, that no Force either of the Heart, or of Medicines, can open their compressed Tubes; then the Hand of the Surgeon is the only Remedy.

9. But every Tumor, which hath not proceeded thus far, nor has any broken Vessels, is curable by a due Treatment of the Glandular Secretions.

10. When, upon making a Revulsion, the Fluxion passes from one Gland to another, then *Sea Water* is always to be used, till the superfluous Humours are discharged by the intestinal Glands.

11. When the Glands are no longer burthened, and hence the Tumors decrease; then cold Friction of the part with the Fucus, and *Sea Water* to confirm the Tone of the weak Parts, produce great Effects.

12. Towards the End of the Cure, Gall-Nuts, Peruvian Bark, and cold Bathing in the Sea, may be properly prescribed.

13. When *Sea Water* does not pass off soon by Stool, it excites Thirst, till the Glandular Secretions have carried off the bituminous Salts, and the Quantity of the Humours is restored that ought to be carried to the Glands of the Throat; and this is performed when the Effect of the *Sea Water* upon the Glands of the Intestines ceases; this Thirst is sudden, and of short Continuance, although the Evacuation is large.

14. Those

14. Those Women who have not their Menfes, are often cured by the Use of the vegetable *Æthiops* and *Sea Water*; when they are of a more thin and hot Constitution than will bear the Use of Gums and Chalybeate Medicines.

15. In those Cases, which are attended with a very great Acrimony, I think, the *Sea Water* does sometimes irritate too much; but this may be rectified by a Milk Diet, with Absorbents; and then, even these Diseases are curable by *Sea Water*.

16. Tumified Glands, by Reason of their weak Tone, are liable to fresh Attacks of the Disease.

17. The Impostumes of the Glands, often rise again near the old Scars, if the Coat of the Glands is not entirely destroyed or consumed.

18. Those Glands which are not strongly compressed by any Force, are chiefly attacked with Fluxions (because they are lax) and perform their Offices more sluggishly.

19. Therefore the Fluxions chiefly of the Upper Lip and Nostrils, use to return again after a Cure, and the Cure in these Parts, is performed with more Trouble than in any other Parts.

20. The Diseases of the small Glands, are not so easily cured as those of the larger.

21. Many Ulcers of the Mouth and Tongue, which nearly resembles Cancers, are often relieved, and sometimes also cured by *Sea Water*, and other Medicines.

22. *Sea Water* is good against Putrefaction, and restrains the Ruptures of the Vessels.

23. The Cure of Tumors in the internal Glands, is safest by *Sea Water*; and no out-ward

ward Application is to be used till the Habit is changed, and the inward Glands relieved.

24. Sea Water keeps the Body from being bound; and thereby affords an easier Passage to the small Stones and Gravel, out of the Gall-Bladder.

25. Sea Water is a very safe Purge with Soap, in a curable Jaundice, because it dissolves and discusses the Tumors of the Glands of the Liver.

26. Deafness, that proceeds from a scorbutic Fluxion upon the Glands of the external Parts of the Ear, is curable by Sea Water.

27. Tumors in the Alimentary Tube are discussed by Sea Water, if they are neither imposthumated, nor scirrhus, nor cancerous; for this Remedy ought not to be used while the Parts labour under an Inflammation.

28. Leanness and a hectic Fever, when they proceed from the Defect of the alimentary Tube, are commonly conquered by Sea Water.

29. Sailors by Sea Water, are freed from the returning Fits of bilious Colics, after the Inflammation is removed by bleeding and lenitive Purges.

30. When a Gland continues in a State of Inflammation, Bleeding, Nitre, lenitive Purges, and whatever may prevent Abscesses, are to be used.

31. When the Inflammation is removed, Sea Water is proper; as it disperses Tumors, and strengthens the Tone of the weak Parts.

32. A Fever, attended with Shiverings, in glandular Diseases, is generally a Sign that *Pus* is matured.

33. A tumified Gland begins first to be dispersed in the softish Edges of the Tumors, and proceeds thence till the neighbouring Parts are restored to their first Form and Magnitude; then it may be plainly discerned, whether it is a single Gland or a Mass of Glands that are morbid; and if the Tumor seems fixed, and adheres to the Part it lies upon, and is also pretty hard, then the cold Bath is not yet to be used.

34. But when the Gland is lessened and disjoined from the Part it lies upon, and becomes something softer to the Touch; then the first Lotion of the milder Fucus, and afterwards by Degrees the Use of the fermented Fucus, or marine Soap, is beneficial above all Things; the Cure is to be finished by cold Bathing in the Sea, drinking every Morning enough Sea Water to procure two or three Stools a Day, immediately upon coming out of the Sea.

35. The Glands, by Reason of their lax Tone, are more subject to the Injuries arising from plenitude than any other Parts of the Body; therefore, the Diseases of the Glands generally return, unless the Use of Sea Water and bathing in the Sea are continued, till the Parts have recovered their due Tone. Hither may be referred the Aphorism of *Hippocrates*, which is also mentioned by *Celsus*, *That if a Woman has milk without being pregnant, or having had a Child, the Menses are deficient.*

36. Those Glands, which have often swelled, and have again partly subsided. and which upon new Fluxions have been more swelled than before, such Glands do seldom entirely recover their native Form and Beauty.

37. And.

37. And by Dissections, I find the Reason of this to be, that Nature, to prevent the bad Effect of the Pressure of the Glands that are growing hard, prepares for them a Sort of *Stratum*, or Wrapper of Fat, upon which the Tumor may lie and rest; and this encreases the Bulk of the Part, and renders it deformed.

38. But the Glands, which have this Cover of Fat, if they are not cured by Sea Water, are nevertheless freed from the Fear of Imposthumes, and so all the Danger of a purulent hectic Fever, and a Consumption, is avoided.

39. But if this Deformity of the Part that remains, gives any Uneasiness to the Patient; it may, for the most Part, be taken away by the Hand of a Surgeon.

40. When, by the Help of any Part, any Evacuation or Separation from the Blood hath been performed for a long Continuance, and as it were by Custom, and the Person receives no Injury thereby; then that Evacuation is not to be turned another Way, but is rather to be continued in the same Channel, if in passing out of the Body it is not attended with much Trouble or Danger.

41. But if it is very troublesome, and likewise dangerous, it is not to be turned another Way till we have first substituted some other Evacuations in its stead, either by Issues, or Blisters, or by constant Purging with Sea Water; that by these Means, a passage may be made for the superfluous Humours to discharge themselves as usual, by the Glands of the Intestines.

42. All critical Tumors of Fevers, are to be left to the Strength of Nature; that we may see what she can perform either by Way of Suppuration,

ration, or Diffipation, before we have Recourse to the Help of Sea Water ; that is, if the Pus is generated in a safe place.

43. If the Obstruction is removed, which had principally affected some Glands, it commonly attacks others, unless timely prevented by a judicious Treatment of the glandular Secretions ; and this Danger in its first Rise, is often apparent to the Sight ; so that it is usually observed, when an Obstruction of the pulmonary Glands is removed by Art or the Strength of Nature, that the Disease appears again afresh in the Glands of the Neck.

44. In promoting and augmenting the glandular Secretions, either by the Glands of the Mouth and Fauces with the Help of Mercury, or by the Glands of the Intestines, by the Help of Sea Water ; regard must always be had to the Strength of the Patient.

45. As Mercury is by nature caustic, and makes an Eschar, and excites Pain, and stimulates more than Sea Water ; so in slender People, by Reason of the great Evacuations it promotes, it commonly brings on a hectic Habit.

46. But if in the Use of either of these Remedies, the Pulse grows quicker than it should be, or the Appetite is lessened, or the Body wastes by Degrees, these signs shew, that the Evacuation is greater than the Strength of the patient will permit ; then it is to be suspended for a Time, and Asses Milk, and absorbing Medicines are to be used in its stead, which yet very rarely is necessary after taking Sea Water.

47. Hot and thin Habits oftener bear without any Inconvenience Sea Water alone, when they

they reject hotter Medicines, although joined with Sea Water.

48. But the more fleshy Habits, that have vitiated Glands, do very well bear *Æthiops*, *Cinnabar*, *Antimony*, and the *Ashes* of calcined submarine Plants, and the like Medicines joined with Sea Water, and Sea Water is thereby greatly assisted.

49. Sea Water is endued with many and great Virtues; but the Unskilful may make a very bad Use.

*An APPENDIX concerning SEA-WRECK,
or Quercus Marina.*

SEA-WRECK, is a submarine Plant, growing upon the Rocks and Shores; and by Reason of a certain native Soap, is so slippery, that it makes the Feet slide of those who walk upon the Rocks to which it adheres. Enquiring more curiously into this Matter, I found the Plant about the End of *July* bursting its Vesicles or Pods, and pouring out a soapy Juice upon the Rocks and Shores. About *Autumn* the Plant shoots afresh from the Branches of the Year past; at every flowing of the Tide, the Branches float in the Water by the Help of certain Vesicles, or little Bladders, which are filled with Air for this Purpose; and at every Reflux of the Tide being left by the Water, they are dried upon the Rocks and Shores: and the Plant continues in this State till about the vernal Equinox, when the Shores are warmed by the Sun's Heat at every Ebbing of the Tide; then the Vegetation is mostly promoted, and the Vesicles or Pods begin to swell

H

with

with a certain soapy Liquor; and this thickens by Degrees, from *March* to *July*, till at last, as beforementioned, the Vesicles burst, and the Vegetation proceeds in the Method aforesaid.

From hence we may infer, that by how much nearer the Plant is arrived to a State of the most perfect Maturity, by so much the more its Juice may be diluted with Sea Water.

In the Cure of morbid Glands, I found there was need of some slippery Soap, which being mixed with Sea Water, was fit to discuss Tumors; and indeed, *Pliny's* Decoction of Frogs is used more successfully than the common Plaster of Frogs; but this Remedy was not always to be had, and indeed was none of the cleanliest; therefore, I ordered the Tumors to be rubbed with this Plant, newly taken from the Rocks, and dipped in its own Juice, and I found this of great Benefit in the Decline of the Distemper.

Moreover, as it abounds chiefly with a certain native Soap and Salt, I gave it inwardly in Powder, to the Quantity of one Dram; I observed the Taste of it was somewhat like Oysters, and that a large Dose of it was nauseous to the Stomach: Afterwards I calcined it in the open Air, and found it converted into a very black *Æthiops*; which in this Work, I have so often called the VEGETABLE *ÆTHIOPS*. The Plant being reduced to Ashes, contains a bituminous burnt Sea Salt, an alkaline sulphureous Salt, together with its native Soap, after the Water is dried away by Fire; and this I used successfully instead of burnt Sponge, and I think it far exceeds it in Virtue.

I also used the *Æthiops* of the same Plant for a Dentrifice, to help the Looseness of the Gums, and to clean foul Teeth; this happily answered
my

my Expectation, and gave me in this Instance, a great and fresh Proof of its detergent Quality.

EXPERIMENT I.

FIRST, I tried to hasten the Growth of the Plant, that I might thereby sooner obtain its soapy Juice. Therefore, I gathered some Vesicles or Pods in the Beginning of *March*, and poured an equal Quantity of Sea Water upon them; then I placed them in a Window which looked to the West, and was warmed by a Fire every Day.

At the End of a Week I found the Pods turgid and full of its proper Juice, but it was thinner and paler than it used to be in the Summer Months; yet I anointed my Hands with it, and it deterged the Skin very greatly, and rendered it smooth and soft; but did not stimulate so strongly as when it is prepared in the Summer Months by Fermentation with Sea Water. Therefore, in those Cases which do not require a great Stimulus, it is both a mild Lotion, and an extraordinary
Fucus

Then I also made a Liniment of that and *Cadmia* levigated, and laid with a Pencil upon the Eyelids of certain Patients two or three Times a Day, and ordered them, at the same Time, to wash their Eyes Morning and Evening with Sea Water; this Method preserved the Parts affected free from Excoriation, and dried up the Eluxion of the Humours, observing to purge daily with Sea Water; then also, I gave inwardly the Juice squeezed out of the Vesicles or Pods, against sharp, scorbutic Fluxions upon the internal Glands. I prescribed it, instead of Snails,

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with

with Cream, drinking after it, either cryngiated or Asses Milk.

It sat easy upon the Stomach, and unless I am mistaken, it answered my Purpose. How far this Medicine may be useful, I leave to be confirmed by Experiments of other Persons.

Thus far I have considered this Plant, before its Fermentation with Sea Water; now I shall take Notice of its various Changes, when it is more stimulating and penetrating.

EXPERIMENT II.

THAT I might have the soapy Juice of this Plant at Hand after *July*, I put some of the Vesicles or Pods perfectly ripe into Glass Vessels; then I poured equal Parts of Sea Water; in ten Days Time the Vesicles generally burst; a certain Mucilage flowed out about the Thickness of new Honey; I applied it outwardly in this State also, and found it more deterfive than before

EXPERIMENT III.

THE same Juice after some Months, became thinner and foetid; but even then, it was more penetrating, and stimulated the Palm of the Hand with a pricking Sense of the Nerves.

EXPERIMENT IV.

THEN I tried how far that deterging Quality might be increased by Fermentation; for this Purpose I kept a Vessel in the Window near the Fire, from *July* to the following *March*; then the Juice became thinner, and also so Sharp, that

that it penetrated the Skin in an Instant, and excited a Sense of slight Pricking, and was as absterfive as Soap-Lees; for it made the Ends of the Fingers wrinkled, and the Tips of the Nails palish; the foetid Smell abated; but to take it entirely away, I put to it a little *Hungary Water*: then, because I remembered that the Ancients ordered a warm Fomentation of Sea Water in paralytic Disorders, I tried an Embrocation of this Medicine in the same Cases; and am strongly persuaded it was very beneficial: I also applied the same successively in the Decline of Tumors of the Glands, for it discusses excellently well.

EXPERIMENT V.

I Heated this Juice, and then I drew some Lines upon Paper with Violets fresh gathered; the Colour of the Violets was thereby turned green; from whence it appears that by Fermentation it becomes an Alkali.

EXPERIMENT VI.

THEN I evaporated two Spoonfuls of the same Juice; after Fermentation it afforded a little more than a Scruple of an acrid pungent Salt.

EXPERIMENT VII.

OF the Plant dried with its Vesicles or Pods and burnt in the open Air, is made the Salt *Æthiops*.

These are the Remarks which I have made upon the Use of this Plant: it remains that I should observe, that there are two Kinds; of

which, the smooth Sort without Vesicles is fittest to rub Tumors.

The other Medicines which I take out of the Sea, are *Sea-Chalk*, *Coral*, *Coralline*, *Pumice-stone*, *Cuttlefish-bone*, and the like; all which correct Acidities in the first Passages, for their Qualities are intirely changed by the Salts, where they give a different shape to these Particles; thus *Coral* dissolved in Acids, is astringent and binding; given by itself, it is rather aperient, and breaks the Points of Acids; thus also distilled Viuegar extracts the opening Tincture of Steel. Vid. Collectan. Chemic. Leyden. p. 286.

Of MADREPORE.

AS I mentioned before the Use of a Lime made of Shells, I have inserted a Print of *Madrepore* fronting the first Page, which Figure I took from the Voyages of Father *Labat*. There are several Species of this Plant, which is to be placed in the Class of Corals. If it is livigated upon a Porphyry and given inwardly, it is powerful in correcting Acidities, and suppressing Fluxes of the Belly.

But when it is calcined, it becomes a great Alkali; and its Salts received into the Blood, do not only sweeten it, but also cleanse and purge off Obstructions of the Glands. But every Calx of this Kind should be newly made and kept dry. I could subjoin something more concerning the Virtues of other submarine Plants, or submarine Medicines, but I chuse to defer it till I have further considered the Matter, and have had their Virtues confirmed by more Experiments.

Three.

THREE LETTERS *from the celebrated* RICHARD FREWIN, EDWARD WILMOT, *and* WILLIAM LEWIS, M. DD.

L E T T E R I.

From Dr. FREWIN, *to* Dr. RUSSEL.

S I R,

WHEN you was at *Oxford* some Time ago, and consulted with me and Doctor *Lewis* about your Son, we often discoursed upon Medicinal Subjects, and especially on certain Medicines that were less known, or little understood. Amongst these Discourses, we mentioned *Sea Water*, which you yourself had used long ago in the Cure of the Scurvy, and many Diseases arising from Tumors of the Glands, and as you intended to write a full Dissertation upon *Sea Water*, you desired me to communicate to you any Remarks I had made upon the Use of it, I therefore perform my Promise in sending at length the following Case.

August 28, 1744. The Wife of a Clergyman, living in the Country, came to me, who was Mother of many Children: She was of a very robust Constitution, and full of blood: her Hair black; her Face red, inclining to yellow; her Eyes were tinged with a Jaundice Colour; her Pulse strong; all which were manifest Tokens of a sanguine Constitution, inclining to a bilious Temperament: She complained of a Colic Pain

and frequent Returns of the Symptoms of a Jaundice. When she was free from these Symptoms she had a tolerable Appetite, without any Inclination to vomit ; no Nausea after eating, or Inflation of the Belly ; nor any Pains in the Bowels. But upon the Attack of the Colic her Pulse was strong and quick, her Tongue rough and yellowish, her Body bound, and the Fæces whitish ; her Urine was thick, and sometimes red, and oftener of a Saffron Colour. When therefore I had considered that this fixed and settled Pain chiefly continued in the right *Hypochondrium*, and never moving towards the Navel, nor near the Kidneys, nor to the left Side, and that it was increased by Riding and Exercise, or any vehement Motion ; upon this I judged the Disease owed its Rise and Increase not to any acrid Matter, or to a Redundancy of the bilious Humour, but to Stones, either in the biliary Ducts of the Liver, or in the Gall-Bladder. Therefore, to prevent an Inflammation or Fever that might happen by the Continuance of the Pain, I ordered her to bleed in the Arm twelve Ounces.

The Surface of the blood was very red and bright, the lower Part quite black, the Serum greenish, and evidently tinged with the Gall ; therefore the Patient took a Bolus this Night composed of

Quicksilver Alcalifat. half a Dram ; Sperma Ceti, twelve Grains ; Species Diambrae without Perfumes, three Grains ; Conserve of Marshmallow Flowers, half a Scruple ; Syrup of Violets, enough to make a Bolus.

And

And next Morning this Draught,

R *Of the best Manna, one Ounce ; Glauber's Salt, three Drams. Dissolve them in two Ounces and a half of Milk Water, and strain it ; then add Syrup of Buckthorn, one Ounce ; Elixir Salutis, half an Ounce ; Compound Spirit of Lavender, one Dram. Mix them for a Draught to be taken early in the Morning, sleeping after it if possible.*

I ordered all her Stools to be diluted with warm Water, and strained through a Sieve.

August 29, she had six Stools, and there was found in the Sieve above an hundred Stones of various Shapes and Sizes, which were outwardly of a dark brown Colour, such as are described in *Med. Syst. Tom. 4. Part 2. Sect. 2. Cap. 3. by Hoffman*, who is by much the best Writer of all foreign Physicians.

The Purge having operated in this Manner, and with this Event, because the Patient seemed to be a little faint, I prescribed this Medicine to be taken going to Rest :

R *Salt of Wormwood, twenty five Grains ; Juice of Lemon, six Drams ; or enough to saturate the Salt ; small Cinnamon Water, one Ounce ; Nephritic Water, half an Ounce ; Syrup of Saffron, three Drams ; Tincture of Species Diambrae, twenty Drops ; Crabs Eyes prepared, fifteen Grains ; Sal Prunellæ, ten Grains. Mix them for a Draught to be taken going to rest.*

Then that I might help both the Defect of the Liver, and the Colic Pain, I prescribed the following :

R *Roots*

R *Roots of Parsley and Asparagus, fresh and cut in Pieces, of each half an Ounce. Pour upon these twenty Ounces of boiling Spring Water, and let it infuse a quarter of an Hour in a glazed earthen Vessel covered. To thirteen Ounces of the strained and settled Liquor add Nephritic Water one Ounce; Syrup of the five opening Roots, and Syrup of Violets, of each half an Ounce; Sal Prunellæ and Diuretic Salt, of each one Dram. Take four Ounces of this Infusion warm three times in 24 Hours.*

R *Venice Soap and Diuretic Salt, of each half a Dram. To the Solution, in ten Ounces of Fennel-Water, add small Cinnamon Water, and Nephritic Water, of each half an Ounce; Syrup of the five opening Roots, three Drams. Make them into a Draught to be taken early in the Morning, and at five in the Afternoon, and going to Rest.*

Within three Days the Jaundice disappeared; but because the Colic Pain soon after returned, the 2d and 13th Day of September the Purge was repeated, as before prescribed, and with the same Success, for the Fæces being washed, there was found a great many Stones like those before mentioned.

She staid at Oxford, and continued the Use of these Medicines five Weeks, for the most part free from the Jaundice, and the Colic Pain, and almost every Day voided some Stones by Stool.

When she was upon her Return home, I advised her to go to Bath for the sake of Bathing, and Drinking the Water, by the joint help of which I had observed many Persons have recovered their Health in these kind of Diseases; but

as her Domestic Affairs would not permit her to take this Journey, I advised her not to use the Medicines so often, but to drink half a Pint of *Sea Water* every Morning at five o'Clock; and afterwards to sleep an Hour or two, to take off or avoid the Thirst which is commonly troublesome after drinking *Sea Water*. Some Months after I was informed that this Woman had voided above three hundred Stones and continued in Health, and free from Pain: and being with Child, about two Years afterwards, she was brought to bed of a strong healthy Child; and she is still alive and well, and free from the Jaundice, and very rarely troubled with the Colic Pain.

I remember a Man, before I was acquainted with the Virtues of *Sea Water*, whose Bowels produced such a large Quantity of bilious Matter that was converted into Stones, that he felt himself as it were inwardly bound with Iron Chains, and always complained of this to his Physicians; and as I often inspected his Stools, they looked like Bits of Brickbats wrapt up in the Fæces.

I have known likewise, that Stones have been formed in the Gall-Bladder so large that they could by no means pass through the Cystic Duct.

A Gentlewoman of a good Family, remarkable for the Gifts of Fortune, was very often tormented for many Years with a Colic Pain, and had had the Advice of the most eminent Physicians of *London*, and went often to *Bath* in the Spring, and to *Tunbridge* in Autumn, to drink the Waters. And in the Years 1740 and 41, before Summer began she came to *Bath*, and committed her Health to my Care. She was then seldom and slightly affected with this Complaint; but drinking the *Bath Water*, and bathing in the usual

usual Manner, she constantly found Relief. In the Year 1744, where I then was the 13th of *June*, being at her House in *Buckinghamshire*, she was suddenly taken with the sharpest Convulsions of the Bowels, attended with the most racking Pain, and being seized with a very acute Fever, and an Inflammation of the Bowels, she died in seven Days; at last the Anatomical Knife discovered the Cause of her Distemper; for the Body being opened, besides an Abscess in the Liver, there was found in the Gall Bladder six blackish Stones, almost growing together, each as big as a Nutmeg. In this Patient there never appeared any Symptoms of the Jaundice, I have neither Leisure nor Skill to discover what may be the State of the Blood, or what the Condition of the Liver that generates such a Quantity of Bile, or that disposes the Body to form these kind of Stones: My Design is only to observe what great Power the daily drinking of Sea Water has in curing these Distempers, joined with Remedies composed of Quicksilver and Soap.

There is also another Case that is worthy of Notice, in which I lately experienced Sea Water to be extreamly beneficial.

A Youth of sixteen, a Scholar of *Winchester* School, of a slender and lax Habit, growing suddenly tall, and therefore weak, loving the Water, and swimming well, last Summer used to go into the neighbouring River twice or thrice a Day, and swim in it too long, and often came home faint, and shivering with Cold.

About the End of the Summer he complained to the Apothecary of a Dryness in his Belly, and of being unusually bound; upon which he took a purging Draught, and an opening Electuary,
by

by the Use of which the Symptoms immediately disappeared, and the Lad thought himself pretty well.

About the Middle of *September*, 1748, his School-fellows observed him making strange Motions with his Hands and Arms, and his Eyes staring and distorted, his Head lying sometimes upon one Shoulder, and sometimes on the other while speaking, and other ridiculous Motions of his Limbs, such as *Sydenham* describes in the Disease called *St. Vitus's Dance*. At last he was taken with a Lameness of his left Leg, so that he could scarce cross his Bed-chamber without the Help of his School-fellows.

The most eminent Dr. *Mead* rightly ascribes these Symptoms rather to a Relaxation than to a Distention of the Nerves; and indeed in this Youth the Muscles of the Tongue and Pharynx, or upper Part of the Gullet, were so relaxed that he could scarcely speak any Words articulately, or swallow any Food. As he lay in Bed his Tongue came out beyond his Teeth, and the Spittle flowed out continually. In this State of Things the Patient was under the Care of Doctor *Bowles* of *Winchester*, who ordered him to be twice bled at stated Intervals, and four times purged, and prescribed him Remedies composed of the *Cordial Confection*, *Powder of Gutteta*, *Castor*, and *volatile Salt of Amber*, with a *Decoction of Peruvian Bark*, and the like Medicines, such as are recommended in these kind of Distempers by the most approved Authors: He took Care also to have Blisters applied to the Nape of his Neck, and Wrists.

About the Beginning of *November*, when Things grew worse I was consulted: Then I
advised

advised bleeding eight or ten Ounces on the 7th of *November*; that on the eighth the Purge should be repeated, because the new Moon was the next Day; for the eminent Dr. *Mead*, and other skilful Authors in *Physic*, have rightly observed, that these kind of Diseases grow worse about that Time. I also desired the Patient might take an Electary twice a Day, composed of *Peruvian Bark*, the great wild *Valerian Root*, and *Cinnabar of Antimony*. I further advised to send him immediately to *Southampton*, as well for the Convenience of drinking the Sea Water, as for going into the Sea instead of a *Cold Bath*. Being carried thither he was put into the Sea the 17th of *November*, and afterwards every other Day.

November 23. After the fourth Time of going into the Sea, he was much better, although this Night being full Moon he grew a little worse.

November 24. This Night and every Day after, he drank half a Pint of Sea Water, either going to Bed or early in the Morning, and bathed in the Sea every Day.

Nov. 27. Every thing being changed for the better, the odd Motions of his Hands and Fingers being much less frequent, and the Use of his Tongue freer; being tired of taking *Physic*, I persuaded him to depend entirely upon drinking Sea Water, and Bathing therein, laying aside all other Medicines.

Nov. 30. Within three Days his Appetite returned, his Limbs were stronger, and his Words pronounced more articulately.

December 12. He came from Bathing daily brisker and stronger, and readier in expressing his Words. Neither on the 9th Day of the Month,

Month, though the new Moon was at Hand, had he any Convulsions or Trembling, or the least Increase in any Symptom of his Distemper. Therefore, I ordered him to continue in the same Method till he had recovered his perfect Health.

Jan. 11. Being informed by a Letter, that the Youth was intirely recovered, I advised him to return to his former Method of Living by Degrees; that is to say. First, That he should bathe in the Sea, three Times, then twice, and then only once a Week; and should drink the Sea Water not so often, and in less Quantity, or only every other Night or Morning.

Feb. 8. The Patient came to *Oxford*, healthy and strong, to see his Friends, and take some Recreation, intending soon to return to *Winchester*.

Worthy Sir, you may make what Use you please of this Letter, but proceed to illustrate with your penetrating Judgment, and establish with the Authority of your Experience, the Art of Physic, in which you have long laboured with the greatest Industry.

Oxford, February 24th, 1748-9.

The Answer of Dr. RUSSEL to Dr. FERWIN.

S I R,

YOU have laid me under the highest Obligations for enabling me to adorn this Treatise with your judicious Thoughts, which you have so freely and candidly communicated, in which you have acted the Part of a very singular Friend. But perhaps you are ignorant how much it is owing to you and your Example, that was in a Manner my Guide, that I have so diligently enquired

enquired into the Way and Method by which the glandular Secretions ought to be treated ; and will hardly suspect that you laid the first Foundation of these Enquiries. For when I read the Letters of the very sagacious and learned Men which Dr. *Freind* has annexed to his Commentary on Fevers, amongst which your Name also is seen, it appeared plainly, that in curing that Fever of the Small-pox, which comes on upon the Decline of the Disease, you all with one Consent, placed your greatest Hopes in carrying off the morbid Matter, by the intestinal Glands ; and that Nature often effects this by the Help of a Looseness, as is observed in the same Work by the most celebrated Dr. *Mead*, to whom you know the greatest Regard is due, not only from us who profess the Art of Physic, but from all Lovers of Learning in general, for his extraordinary Cultivation and Patronage of the politer Arts.

Therefore, as I saw the most prudent Physicians were agreed in this Opinion, and were under no Fear that the morbid Matter should return into the Blood, which generally perplexed Physicians ; and as I observed, that by leaving the common and beaten Path, they had acquired immortal Honour ; and had done singular Service to Mankind ; I was no longer dubious, but concluded, that the same Secretion, continued a long Time by the intestinal Glands, would most certainly prove beneficial in most chronical Cases, when any Distempers have a long Time possessed the Glands, or any laxer Parts of the Body. For, if a rosinous Purge may be given without Danger in an eruptive Fever, I readily concluded, that a saline Purge might be given in the same Manner, when the Disease was neither acute, nor attended with



1. *Quercus Marina* or *Sea Wreck*, one Side with Pods the other Side without.
 2. *Madrepore*.—3. *Coralline*.—4. *Coral*.



with any Fever; but in the mean Time, it appeared to me extremely difficult, how to procure such a Medicine that should do the Office both of a Purge, and an Alterative, and which should conduce both to cleanse the obstructed Tubes, and carry off Redundances, and likewise strengthen the Tone of the Fibres. Therefore, about the Year 1724, when I had again read those Letters *treating the glandular Secretions*, and of the various Medicines which may be applied to various Parts; I drew out a Sort of a Sketch, and sent it to my very learned Friend *B. S. Albinus*, at that Time Professor at *Leyden*; but as this was a rough and imperfect Piece, and not worthy this Age, and the Experience which I have obtained in the Space of more Years, I thought proper to publish something more perfect upon this Subject; especially because, having considered the Use of Sea Water, I seemed at length to have found a Remedy, which would do the Work proposed, without any Danger.

And I was confirmed in this Opinion, by the Letters of *Dr. Friend*, that Light of your University; I mean, his Remarks on intestinal Excretion, and purging in an Erysipelas of the Head; and I also have seen this Disease happily treated, with the Help of Glauber's Salt; so that if I had any Scruples remaining, they were all removed by this Consideration.

And being convinced by these Arguments, I thought it plainly appeared, that Nature had formed these Passages and Excretions, that they might be subject to the Command of the Physician, more than all the rest; and that whenever it was requisite for Health, they might afford a salutary Discharge to all superfluous and noxious Humours.

Having premised these things, there is still something remaining besides what I have said before in this Work, concerning which, I should take some Notice; especially as you gave me an Opportunity of seeing its Effects in the elegant Case you sent of St. *Vitus's* Dance; I mean, those Things which it is necessary to observe in using the Cold Bath; and I do this the more willingly, because the Use of Sea Water either internal, or external, is not of such a Nature as to do neither good nor harm; but we are to judge as the celebrated *Mead* has somewhere observed, that in all Things which our Art contains, there is nothing that does good, but what may also do harm. I shall write to you upon this Subject, without confining myself to any particular Order or Rules of writing, not intending to give an accurate Account of the Cold Bath, but shall set down every Thing, as it occurs to my Memory. In the first Place therefore, it is to be noted, that neither the Cold, nor Hot Bath, is to be entered into after eating or drinking freely; which the Ancients avoided so carefully, that they judged it necessary to abstain both from eating and drinking for a small Time after coming out of the Hot Bath; but in the Use of the Cold Bath, a little Draught of Sea Water is convenient immediately upon coming out of the Sea; because by purging the Belly, it prevents the Blood from flying into the Head, and preserves the Patient free from the Head-ach; neither if this Method is observed does the Nose bleed, which otherwise does sometimes happen; nor are the Glands of the Neck subject to swelling, as they are sometimes when the Patient uses the Cold Bath too soon.

More-

Moreover a perfect Repose of the Body, and Calmness of the Mind, is to be observed, before the Use of the Cold Bath; and all the Exercise of the Parts affected must be forborn, that the Fibres by these Means, when they contract themselves, may have the greater Force to overcome any Obstruction; which if they are tired before with any Labour, is not so easily affected, and I give the greater Caution about this, both because I have seen some Persons bathe after hunting, and other rural Exercises without any Regard to Time or Circumstances; and also, because I have seen others err in a different Way; for as Sea Water greatly conduces to strengthen the debilitated Power of the Fibres, if it is given after due Evacuations, and after the Obstructions are something relieved by internal Remedies; so I have seen the same Water do Harm in any Plenitude, or any troublesome Obstruction of the Tubes that still continued painful; for in these Cases, the Solids are distended, and thereby more weakened; because they strive to throw out that with a great Force which in this State of Things can by no Means be rejected.

And I observed this more than once, and sometimes in hard Tumors upon the Joint of the Knee, when I have ordered cold Water to be poured upon the Part affected, and the Cold Bath to be used, though the Obstructions were diminished before by internal Remedies, even here by a too hasty Use of the Bath, these Cases seemed to grow worse.

But altho' I despaired of those Patients, as being incurable; yet after repeated Fits of intermitting Fevers, which showed that the System of the Glands had undergone a great Change, and when

those Viscidities which had been lodged a long Time upon the Part affected, by some Means were so disposed, that they might be moved ; then I have seen even such Patients easily cured by Sea Water, and the Cold Bath.

Then the greatest Care is to be taken, to know whether the Bowels are sound, or not, before the Use of the Bath ; for if the Lungs, the Liver, the Pancreas, the Spleen, or the Glands of the Mesentery, labour under any Disease, or putrefaction, or Scirrhus, then the Bath will do harm ; for although *Celsus* advises swimming in the Summer for the Jaundice ; and *Antonius Musa* also (who first instituted and promoted cold Bathing) prescribed the Cold Bath for an Obstruction of the Liver, which afflicted *Augustus Cæsar* after his Journey to *Spain*, as *Suetonius* relates ; yet they who give an Account of the Emperor's Case, differ so much in their Relations, that we can draw no Inferences from hence for Practice.

But I have very often found Sea Water serviceable in the Jaundice, and *Celsus* mentions Salt Water, and salted Wines, as the chief Remedies in the Jaundice ; but indeed, I never ordered the Bathing till the Obstructions of the Liver were partly removed. There is also another Kind of Cold Bath, when the Water falls, or is poured upon the Part affected ; but this also increases the Strength of the Disease, if proper Care has not been taken to remove Obstructions ; because it occasions frequent Vibrations of the Nerves, and Contractions of the Membranes ; but where it is necessary before the Use of the Bath, to take off the Burden on the morbid Part, and make a Revulsion, I have for the most Part found Emetics beneficial ; and chiefly so in Diseases

cases of the uterine Glands, and of the Joints. Bathing in the Sea is generally to be used early in a Morning, because it is not so cold as some Springs; and in most Cases, I order a little Draught of Sea Water immediately after coming out of the Sea, which generally passes off soon, and makes the Patient chearful, and procures a good Appetite; sometimes instead of pouring *Sea Water* upon the morbid Parts, I prescribe a slight Friction with Sea-Wreck, without Vesicles, or Pods newly taken from the Rocks; and sometimes in Palsies, I advise a Fomentation of warm *Sea Water*, and rubbing of the Part affected with a flesh brush, to open the Obstruction of the Part, till by a general Evacuation, the Patient is prepared for the *Bath*.

But Paralytic Persons are very much fatigued, and their Spirits much depressed, if they bathe in the Heat of the Day, as they bear Heat less patiently than Cold; and how much the cold Weather relieves their Disorder appears from hence, that in the severest Cold of Winter, they walk better than when the Air is hot and moist. And though the Vapours of the Sea, which are exhaled by the Heat of the Sun, are very plentiful, yet they are moist, and relaxing, and deprived of that Salt, which gives a firm Tone to the Solids; for there is little or no marine Salt exhaled by the Heat of the Sun, which is plain from an Experiment delivered down to us by the Ancients; for the Seamen of those Days used to obtain a very grateful, though small Supply of fresh Water by this Means. *Seamen often suffer for want of sweet Water, we shall therefore direct them how to find this Supply; Fleeces of Wool, spread about the*

I 3

Ship,

Ship, grow moist with the receiving the Vapours of the Sea, out of which sweet Water may be squeezed. Plin. Nat. Hist. lib. 31. cap. 6.

And in paralytic Cases, the method of purging and the Cold Bath, to the best of my Knowledge, is to be preferred before any other Means; for this Disease seems to arise from a Relaxation of the Tone of the Parts; and therefore when they are oppressed with Heat, the Evacuation by the Skin is increased, the animal Spirits are dispersed, and there is a more plentiful Discharge of Urine; the Consequence of which is a Constipation of the Belly, which is sometimes so troublesome, that for several Days together, they have no Discharge by Stool, without some Assistance; therefore, if in these Cases *Sea Water* is rejected, it is absolutely necessary to take another Purge; and indeed, if the Evacuation procured by purging is ten times greater than what is naturally usual, yet as the Annotator on *Sanctorius* observes, it does not weaken the Patient more than if the Evacuation by Perspiration was doubled; but cold *Sea Water* renders the whole Habit healthy and strong, and though perhaps it will not entirely cure a Palsy; yet with proper Evacuations premised, joined with internal Remedies, it is generally, as I think, more successful than any other Method. It is not improbable that the Use of the *Sea Bath*, after a Fomentation with warm *Sea Water* might come into your mind when you lived at *Bath*.

For, as I have heard many Years since, from my learned Friend Dr. *Oliver* of *Bath*, the warm Bath, in order to attenuate and dissipate the Humours, is commonly and successfully used there before the Cold; and unless I am mistaken, I have

have before observed, that if *Sea Water*, and cold Bathing do not succeed, I always resolved upon a contrary Method; and that I have often cured Diseases, that had before withstood all the Power of *Sea Water*, and the Sea Bath, after using a Warm Bath, and Asses Milk.

I have further observed, in my account of *Sea Water*, the Use thereof in Diseases of the uterine Glands; but if we would know the Benefit of cold Bathing in the Sea, as well in melancholy Madness, as also in the Bite of a mad Dog; as also in Impotency arising from the immoderate Use of Venery, and how greatly it helps all the glandular Secretions; the Writers of our Art are to be consulted, the greatest Part of which, extol its Virtues with the highest Praises. Lastly, it is to be observed, that the Sea Bath is so successfully used in scorbutic, and almost all cutaneous Eruptions, not only because the Salts with which it is saturated do greatly deterge, and cleanse the Skin better than common Water; but because it penetrates through the Skin into the Glands, and mingles with their Juices, and wonderfully purges off the Phlegm, and Viscidities that obstruct the Tubes of the Glands, and thus removes the inward Cause of the Disease, as well as the outward Foulness of the Skin. And here, most learned Sir, I shall make an End of Writing, lest what I send you, should look more like a Book than a Letter, and should think myself extremely happy, if you, who are a principal Person, and, as it were, the Master of the Art of Physic, in the most flourishing University, should approve my Way of reasoning.

I am, &c.

A Letter from Dr. WILMOT to Dr. RUSSEL.

S I R,

I Delayed writing so long on purpose, that I might have some Proofs, how beneficial Sea Water is in the King's Evil, either being drank, or applied outwardly; and that having experienced its Virtues, I might communicate my Observations to you according to your Desire. My Wishes are at length accomplished.

C A S E I.

A Woman about Forty, in every other Respect healthful, was subject from her 15th Year to a freer Flux of the Menfes, but upon its decreasing at this Time, she was taken with such a violent itching of the *Pudenda*, that she could scarce ever refrain from scratching, and lay awake whole Nights, unless she took Opium; which sense of itching continued to increase every Day; to compleat the Misfortune, a Heat and Hardness about the *Pudenda* miserably afflicted the unhappy Patient; she was a modest Matron, and utterly abhorred the Thoughts of being examined by a Surgeon, but upon my Advice she sent for a Midwife, who found many hard Tubercles approaching the Size of Peas, lying hid in the Parts beforementioned.

As this was the Circumstance, and that neither Medicines of Sulphur or Mercury, nor the Waters of *Holt*, *Scarborough*, nor *Cheltenham*, which she drank several Weeks every Year, could conquer, or even mitigate this troublesome Disease, I had recourse to Sea Water, the singular Efficacy of which, in opening Obstructions of the Glands,

Glands, I was formerly acquainted with from your Accounts, and now from my own Experience. I ordered her to bathe in the Sea every Morning, and to drink half a Pint of Sea Water immediately after bathing, and the same Quantity an Hour after; and to foment the Parts affected frequently every Day with Sea Water, and to apply a Linen Cloth wetted with the same Water, warm within the Parts at Night, keeping it there all Night.

In about six Weeks Time, the Woman began to recover, the Itching and Heat ceased, what before was hard and rough, grew soft and smooth, and the Tubercles entirely disappeared in about eighteen Weeks more; and together with these, which deserves particular Notice, another Tumor disappeared, which was certainly of the same Kind, that had long appeared very ugly under her Chin.

C A S E II.

A Young Lady of noble Birth, just entering upon her seventeenth Year, was troubled to that Degree with hard Swellings continually rising near the Breasts, under the Ears, and in other Parts of the Neck, so that she had no Rest from the Disease, and no End of taking Physic.

In one Place, you might see a Knot rising, growing, suppurating, and extremely difficult to heal; and being scarcely covered with a Skin, a new Knot would rise in another Place, and begin to suppurate, giving a melancholy Example of others to come after.

When Things were in this Situation, and the Disease had long exercised the Lady's Patience, nor any Relief could be obtained from Calomel, Mercury,

Mercury, Precipitate *per se*, and other Mercurial Medicines; when burnt Sponge, Coralline, Woodlice, Lime-Water, with *Boyle's* Infusion of *Paronychia*, joined to the Use of purging Waters, were of little Service, and though they gave some small Relief, were of no Use to disperse and entirely root out the Disease; upon consulting with Mr. *Ranby* the King's chief Surgeon, by far the most excellent in his Art, we resolved upon a new Method of Cure.

We ordered her to go into the Sea every Morning, and to drink as much Water thereof as would give two or three Stools a Day, and to wash the Ulcers and the hardened Glands frequently with the same Water warm; by this Method of Cure, continued about two Months, the Ulcers were healed up, and some of the strumous Knots being entirely dispersed, and the rest mollified, the Lady recovered her former Health; she returned to Town, and having experienced the salutary Effects of this Remedy, by our Advice she so happily continued all the next Winter to drink the Sea Water every Day, washing with it warm, that she enjoyed her Health entirely free from her old strumous Disorder, or from any new Attacks thereof.

C A S E III.

A Young Lady of the first Rank, about six Years old, was troubled with a strumous Swelling upon her Upper Lip, the axillary Glands were increased in Bulk, and grown hard; her Abdomen was unequally swelled, with hard Knots here and there, which yielded not to the Touch; to this was joined a dry Cough, without

out spitting, and a little Difficulty of breathing, especially at Night.

These plain stumous Signs in the Lip, and the axillary Glands, gave me strong Suspicion, that the Glands of the Lungs and Mesentery, were infected with the same Taint, and were swelled and grown hard, and that without timely Assistance there was Danger of their forming a Pus, which would produce a Consumption of the Lungs, and an Atrophy, or wasting away of the Body.

After bleeding, I ordered five Spoonfuls of Sea Water every Morning and Night, which generally procured three mucous and very foetid Stools, washing her Lip often every Day with the Sea Water warm.

By this Method of Cure strictly continued for a Month, the Lip, and the axillary Glands were softened, and the Abdomen returned to its natural Condition, but so that as the Swelling of the Abdomen declined, so much the more the Knots appeared and resisted the Touch, which were before hid under the Tumor.

This Work so happily begun, three Months more were spent in the Cure, excepting every fourth Day, in which the Patient was allowed to rest; for the Swelling of the Lip was intirely subsided; the Knots of the Abdomen were no longer to be felt by the Fingers; the axillary Glands were plainly diminished, and would certainly have yielded in like manner to this Remedy, if the tender Age of the Patient could have born a longer Use of it; but being nauseated with repeated Doses, and suffering an immoderate Thirst, which I have observed to torment all those who have long used Sea Water, she was hindered

hindered at this Time from proceeding so far as to remove that Tumor intirely; for her most noble and tender Parents thought proper not to exercise any farther the Patience of their dearest Daughter, thinking that those small Remains of the Disease less troublesome, because less in Sight, were of no Consequence, or might be deferred till another Time. I could bring more Examples of those who have been freed from the King's Evil by the Use of Sea Water, but I think it needless to enlarge upon this Subject. I have selected these Cases out of many, as they seem to have something singular in them beyond the rest, lest, by adding many parallel Cases, I should repeat the same thing over again: a Repetition of many Cases would be tedious, and give no Confirmation to the Truth of a small Number, and would greatly transgress the Bounds of a Letter.

How great Thanks, therefore, are due, and will be given to you by the Sons of Physic, who have struck out and communicated to them, such an easy, safe, and (I might almost say) a certain Method of curing a Disease, which has hitherto been found so very troublesome both to the Patient, and the Physician. *I am, &c.*

Dr. RUSSEL's *Answer to* Dr. WILMOT.

MOST worthy Sir, I received your most obliged Letter, and though I have a just Sense of the many Obligations I owe to your Friendship, yet I am at a loss for Words to express it; what you write, that you still hold in the Opinion concerning the Virtues of Sea Water, which (in a very friendly Manner) you formerly

formerly readily entertained upon my Testimony, is very agreeable to me for two Reasons, because you did not reject this Medicine, and because it did not deceive your Expectation.

But I am extremely pleased that you approve and are convinced of its Virtues by your own Experience; for all Physic is generally, and ought to be built upon this Foundation; for the splendid Names of their Patrons, cannot long support and defend bad Medicines; nor can the Authority of their Opposers long suppress and keep in Obscurity those that are good; but they will at last break through the opposing Shades, and shine with greater Lustre; although the Authority of its Opposers may give some Check to the Progress and Increase of any new Remedy; which you will easily remember to have happened in the Rise and Progress of the Peruvian Bark, and some other powerful Remedies.

And in the same Manner in which I first recommended this Medicine to you, I have also proposed to the several Practitioners in Physic, with whom I have happened to converse; imparting to them certain Facts and Experiments that they might judge of them, and being taught by Experience, might be convinced after some Years of the great Efficacy of this Method.

And indeed, as far as I can judge by my Experience in this Matter, it does not appear that any Hurt can arise from hence, unless it is rashly used. Nor did I ever hear any Thing from my Friends, that discovered any hurtful Qualities in this Medicine, but rather all the Testimonies I received from them, unanimously agreed in the Praise of it, and confirmed its Excellence and Virtues, as well because it opens Obstructions,
and

and dissolves hard Tumors, sometimes even where the Heads of the Bones were affected; and because it cleanses and defends the whole System of the Glands from impure Viscidities. All which it performs so wonderfully, and so safely, that I may truly say, that this new Medicine, is in a manner a Rein delivered into the Hands of the skilful Physician, by which he may govern the Secretions of almost all the Glands.

As to the free Use of Sea Water, and the Quantity which may be taken, it does not seem to me to be a Thing so much to be feared, as some People imagine; for, I do not remember any Person who was hurt by too much Sea Water; for many Persons have used it for a Year together, allowing some little Intervals of Rest, with very great Benefit in some very obstinate Cases; and I now send you an Instance that lately happened of this Matter; you will find in my Treatise, the Case of a Patient who drank 25 Gallons of Sea Water in an uninterrupted Course of purging; in the mean Time, the hereditary King's Evil disappeared by Degrees, and she daily recovered a better State of Health, and she never had a Relapse, nor any Reason to suspect one.

I call this Disease *Hereditary*, because soon afterwards I saw her Brother labouring under a large suppurated scrophulous Tumor, reaching from the Ear to the Collar-bone.

And these Instances I think sufficiently proved, that this Remedy is not liable to those Inconveniences that some People apprehend; I may also add, that it opens Obstructions, and suppresses Putrefaction, and defends from the Fear of an Imposthume, and strengthens the Tone of the Stomach and Bowels; and at the same Time,
washes

washes the Mouths of the lacteal Vessels, and purges the mesenterical Glands; by which Means, a sweet and healthful Chyle is transmitted to the Blood in due Quantity; and the Heat and Draught of hectic Habits, are hereby moderated; and to speak my Sentiments, among all the Medicines that have a Place in the *Materia Medica* (and they are almost innumerable) you will not find any other which may be continued so conveniently, and which so safely opens inward Obstructions as *Sea Water*; if it is not rashly used, nor the Vessels of the Glands burst, nor the morbid Parts grown perfectly scirrhus; for as it dissolves external Tumors of the Glands, so in like manner producing the same Effects every where, it also disperses internal Tumors; for being inwardly taken, it chiefly carries off the morbid Matter by the Glands of the Intestines, which more nearly feel its Power and Stimulus, and most easily carry off the Disease by their Discharges; and so, by this Method of Cure, almost all the System of the Glands is exonerated, relieved, and cleansed; as it is well-known to happen in a Salivation, by the Help of the Glands of the Mouth.

But allowing *common Salt* to be taken by some Persons in greater Quantity than is convenient, (although, in my Opinion, this seldom happens) yet I do not admit that any Arguments can be drawn from hence against the Use of *Sea Water*; for the Waters of the Sea are mingled with many mineral Springs flowing into it, and abound with the Helps of Bitumen and Nitre, and various Salts; and are in a Manner enriched with the Spoils of submarine Plants and Fishes, and of other Things which are almost innumerable; therefore

therefore the *Sea Water* is to be looked upon as quite a different Thing from common Salt, which is evident from its different Effects; and Experience testifies, that the Use thereof is never attended with any bad Consequences if it is given with proper Caution.

And that it confirms the Tone of all the Parts, and gives Strength and Vigour to the whole human Frame, may be inferred from hence, that those are most inclined to Venery, and are stimulated to it that use salt Meats, as it is generally said of Sailors. And it is probable, that the Antients were well acquainted with this Property of Salt, as they feign *Venus* to be born of the Sea, who was the Goddess of Love and Pleasure.

Salt is also a kind of Instrument in the Hands of Nature, which she uses for the Procreation of all Kinds of Plants and Animals, and it is necessary that there should be a due Proportion of it in our Blood, and upon it, in a manner, our Health depends; for if the Kidneys, or any other Glands, are not sufficiently stimulated to perform the Secretions necessary to Health, and preserve entire the elastic Force of the Solids; then the due Secretion of the Lympha being lessened, a Dropsy ensues.

But where this Salt fails, and is not sufficient to strengthen the Tubes of the Vessels, the Vessels are thereby relaxed, and lose their proper Tone, and also suffer the Fluids to pass through imperfectly secreted: Which happens in a *Diabetes*; for when the Urine begins to flow without this Salt, which abounds in the Urine of all healthful Persons, and resembles the Sweetness of Honey, then presently the Tone of the Kidneys being deprived of its due and necessary saline Stimulus,

is more and more relaxed, and the small Vessels are weakened to such a Degree, that they pour out the Urine in a copious, and almost uninterrupted Stream, 'till the Urine sometimes flows out mingled with the Chyle. And some affirm, that red Wine has passed through the Kidneys without any Change of Colour. But this morbid State of the Kidneys is never relieved 'till that State of the Urine is recovered, which sufficiently abounds with that Salt.

The Digestion of Ulcers in diabetical Persons will continue no longer than their Urine continues salt. Moreover, I remember to have seen Issues that were made upon the Shoulders against scorbutic Palsies, that were continued for the Space of many Years without Danger; but when the Patient was at length seized with a Diabetes, then the Issues spread wider every Day, as long as the Urine continued sweet. And although the Spirit of Sal Ammoniac resisted the growing Evil better than any other Remedy, and rendered the Fibres of a brighter Colour, yet this always seemed to me, as it were, to give Place slowly to the Enemy. For if the Force of the Diabetes was not broke by the Bark, nor any other Helps, and the Saltness of the Urine did not return, the Edges of the Issues used to mortify, and the Patient generally sunk under the Disease; although the Surgeon, at the same time, omitted nothing that the greatest Skill in the Art could suggest.

I was the more willing to relate this Case, because when the Issues were upon the Shoulders, there seems to be no other Cause to produce this Misfortune than the Disease alone. And how much the Salts of the Gall, rather than any others, conduce to form cutaneous Eruptions,

appears from the Eryfipelas, and from more than one kind of scabby Eruptions, as also from certain furfuraceous Foulness of the Skin, where the Matter with which the Pustules are filled, is yellow, and deeply tinged with Gall. And these Eruptions are cured, not by changing the saline State of the Blood, which is a very tedious and troublesome Work, but by bringing away a greater Quantity of Gall from the Liver, by the Use of Purgatives. This plainly appears by Dr. Friend's short Treatise *De Excretionē Intestinali*.

Therefore we ought to esteem Salt necessary to preserve the Tone of all the Parts, lest whilst they are continually acted upon by a certain propelling Force, they should lose their Power and Strength, and be enervated, and by their Weakness and Sluggishness give Rise to Diseases.

But I have not mentioned these Things that you should think I use the *Sea Water* in the Diabetes, for I never tried it in this Disease; my Design was only to shew how much, in my Opinion, a due Proportion of Salt contributes to the Health of the Body. And indeed, that Salt is necessary to Health is plainly demonstrated by what Physicians observe, that those Persons who use little or no Salt with their Food, or who are but little assisted by that internal Salt, either that this is carried off by the Flux of Urine, or other Excretions; that such Persons do generally exhale a strong, and putrid Smell. And further, that in such Persons the Food generally continues longer in the Stomach and Intestines, and after Extraction of the Chyle a useless Load seems to remain, and oppress the Fibres.

And what great Benefit Sea Salt is to those Animals that eat it with their Pasture, will easily

easily appear upon a flight View. A large Quantity of Salt, taken in this manner, preserves Sheep free from the Distemper which the Shepherds call the Rot, which Disease is often produced by wet and rich Pastures, that are not seasoned with Salt: And Examples of this kind are well known, and very common in this Country.

For if you drive Sheep that are very found into moist Pastures, that are subject to the Overflowing of Rivers, and the damp Vapours of the *Spring* and *Autumn*, these Symptoms generally follow. At first the Sheep become suddenly very fat and brisk, but soon after grow dull and heavy-eyed; soon after a vast Number of Animalcules breed in the Passage of the Gall; then the Liver is tainted, and filled with innumerable Tubercles and watery Vesicles; then livid and scorbutic Spots arise in the Skin; then the Wool is easily plucked off, or rather falls off. In these Circumstances they call it the *Dry Rot*. But when these watry Vesicles are burst, and the Water is collected in the Abdomen, it is then called the *Wet Rot*. But if you drive Sheep to feed in those Places that are washed by every Tide of the Sea and are therefore salt, then you will find the Rot, and all those Symptoms, suppressed by Sea Salt, so that there will be no Animalcules in these Sheep, but they will rather be found and healthful for a long Time.

I will also add, that when Horses are affected with scorbutic Eruptions, and the Horse Doctors have tried all Means in vain, they often send the Horses in this Extremity to the Salt Marshes, by which the Disease is generally cured.

And these are the Remarks, most learned Sir, which I intended to impart to you concerning

my Method, and the Use of Salt, besides those I have taken Notice of elsewhere, which, if your penetrating Judgment shall approve, I shall be extremely pleased, and shall not repent that I have undertaken the difficult Task of writing.

I am, &c.

A Letter from Dr. LEWIS to Dr. RUSSEL.

Dear Sir,

AT length I perform my Promise, in sending you this Letter, but I am afraid it will not answer your Expectations, as it contains no studied Thoughts, nor any lucky Invention, nor any Fruits of a penetrating Judgment; I only send you an Account of two Cases in Physic that are faithfully related, though in a plain, and artless Manner. Whatever Reception it may find, it will be a great Pleasure to me to have satisfied your Request, and to prove, by this Instance, how ready I shall always be to obey your Commands.

C A S E I.

A Man thirty Years old, of a phlegmatic Constitution, and of a lax and spongy Habit of Body, after drinking large Quantities of Liquor, to which he had been too long accustomed, fell into a sudden and violent Pain, about the *Pit of the Stomach*; it extended also over all his Back, as far as his Shoulder-Bones, which would not permit him to breathe, to walk, nor to stand upright. He had a foul Taste of Bitterness in his Mouth, with a Nausea, and continual casting up of Gall. The Apothecary was presently sent for who ordered him to lose a large Quantity of Blood, and to take a gentle Purge to give him

two

two or three Stools. This greatly relieved his Pain, and the Patient, for some Time, thought he had escaped all Danger; when he soon found his Hopes deceitful, for the Symptoms returned again with more evident Tokens of a Jaundice. His whole Skin was yellow, but chiefly in the Whites of the Eyes, and about the Temples: Both his Body and Mind was affected with a great Sluggishness, and his Strength failed him remarkably; he had a Difficulty of Breathing; his Fæces were few, white, and somewhat viscid; his Urine was so red and thick, that it came near to Blackness, and instead of the fore-mentioned Pain, he had a troublesome Weight, in the right Side, under the false Ribs, but without any Hardness, or any visible Tumor. I was presently sent for, and considered all the Circumstances as carefully as I could, and because there was no Sign of a Fever, or an Inflammation, I thought the Intentions of Cure were only to disperse the Obstructions in the Passages of the Gall, which seemed to be obstructed with a viscid and chalky Matter; and by this Method the Gall would obtain a freer Course into the Intestines. Therefore I immediately ordered a Clyster, and about the Middle of the Night gave him a Bolus, containing about fifteen Grains of Calomel, and after a Purging Potion of the Infusion of Senna joined with Manna, and *Glauber's* Salt; both which were repeated three times every third or fourth Day, as the Strength of the Patient would bear it. Besides which he took Vomits; and that every Day might be employed towards a Cure, I advised him on those Days he did not purge, to take twice a Day five or six of the following Pills, drinking after them four Spoonfuls of the saline Mixture.

R *Of Castile Soap, three Drams; Woodlice prepared, one Dram; Syrup of Saffron, enough to make it into moderate Pills.*

R *Of Salt of Wormwood, four Scruples; Diuretic Salt, one Dram; Juice of Lemons fresh squeezed, two Ounces. When the Fermentation is over, add simple Milk-water, four Ounces; Water of Nutmeg, and Syrup of Saffron, of each one Ounce. Mix it.*

By exactly persisting in the Course of Medicines, the Disease seemed to give way a little, yet it continued, and with great Obstinacy; for tho' the Skin came something nearer to its natural Complexion, yet it was tinged with Yellowness, and the Pain still remained fixed; but, which was of greater Consequence, he began to lose his Appetite, and his Strength entirely. Having seriously considered all these Circumstances, I resolved to try the Power of *Sea Water*, which has a Stimulus sharp enough to purge the Belly effectually, and to cleanse the Passages of the Gall, and does not hurt the Stomach nor weaken the Patient, but rather augments both the Strength and Appetite: For *Sea Water*, or which amounts to the same, *Salt Water*, was frequently used by *Asclepiades* heretofore in the Jaundice, as *Celsus* relates in the 24th Chapter of the 3d Book; and now again it is used with the greatest Success, most accomplished Sir, by your Persuasion, in opening Obstructions of the Glands. I therefore ordered the Patient to drink half a Pint of this Water warm every Morning as soon as he rose. And that I might add something of a ponderous soapy Medicine to this saline Stimulus, I prescribed the following Electary, to be taken every

every Day at four in the Afternoon, and at going to Rest.

*R Of Conserve of Orange Peel, one Ounce; Cinna-
bar of Antimony prepared, and Castile Soap, of
each half an Ounce; Woodlice prepared, three
Drams; Powder of Saffron, half a Dram; Syrup
of Orange-Peels, enough to make an Electary.*

This Method of Cure being followed for four or five Days, soon produced a Change for the better; the foul and jaundiced Hue of the whole Habit began by Degrees to disappear, his Appetite and Strength returned, that very troublesome Sense of Weight which he almost continually felt on his right Side went away entirely, after discharging by Stool a vast Quantity of viscid and bilious Matter; and to be short, he was happily restored to his former perfect Health in three Weeks.

C A S E II.

A Beautiful and amiable young Lady, scarcely entered into her nineteenth Year, having hitherto always enjoyed a perfect State of Health, by an accidental Fall struck her left Leg against a Stone, but only so as to raze the Skin. This seemed to be a slight Hurt, and perhaps in a thousand others less beautiful, and of a more healthy Constitution, it would certainly have proved of no Consequence; but the Blood that nourished this most lovely Form was infected with a scorbutic, if not a strumous Taint, which from this slight Cause, as from a Spark, broke out soon after into a most dreadful Fire. This slight Wound was at first neglected, and looked upon as nothing, till the Skin seemed to be in-

flamed, and distended round about it. Bleeding
 was soon administered and repeated three times,
 cooling Purges were given, and Emulsions pre-
 pared with Nitre, and all the Medicines that
 could appease the violent Emotion of the Blood;
 and outward Remedies were applied of a molli-
 fying, and discussing Quality, under the Care of
 a very skilful Surgeon; but all in vain, the Evil
 encreased every Day, and the Inflammation now
 tended towards a Suppuration: Therefore, that
 the Bone underneath should get no Damage, as
 soon as the Pus began to generate, the Abscess
 was opened by the Help of a Caustic, and all pos-
 sible Means used to cure the Wound: But tho'
 it was now seven Weeks from the Time the
 Accident happened, there was yet no Appearance
 of healing the Sore: the Wound was foul, and
 the superincumbent Flesh soft and fungous, the
 Edges were inverted, and instead of a white,
 smooth and even Pus, it continually discharged a
 thin, foetid, and bloody Ichor. Nor was the
 Cause of these dreadful Symptoms long concealed,
 for upon a careful Examination of the Ulcer by
 the Help of a Probe, the Bone was found to be
 stripped of its Membrane, the Bone itself being
 uneven, rough, and carious; therefore it was
 necessary to enlarge the Wound, and to make
 Incisions in the affected Part quite to the Bone,
 to cleanse it, and to do every Thing to promote an
 Exfoliation, or scaling of the Bone. Nor was it
 neglected, at the same Time to give the best in-
 ternal Medicines, which might temper the sharp
 viscid Humours, and render them fluid, or carry
 them off by gentle Purgations; for very small
 Doses of Calomel repeated at proper Intervals,
 and Bolusses composed of crude Antimony,
 Æthiops

Æthiops Mineral, and the like Medicines, with Diet Drinks prepared of Lime-water, varied as the Case of the Patient seemed to require, and sometimes mild Emetics were employed to make a Revulsion ; but for fear of a Hectic Fever, recourse was had to Asses Milk and testaceous Powders, to be taken twice a day ; but I should tire you to relate all the Means used for the Recovery of this most lovely Lady.

In these unhappy Circumstances the Lady was confined at home, without resting Night or Day ; for she had lost all the Comforts of Life, being deprived of her Companions, and no longer followed by a Crowd of Admirers, but left alone to mourn her unhappy Fate. And though she was grown thin and pale, and almost killed with Grief, and want of sleep, yet still the Charms of her Person remained unconquered by the Injuries and Power of the Disease.

Eight Months were now almost past since the Patient had laboured under this Disorder in spite of all the Assistance of Physic. There appeared as yet no Hope of Recovery, no signs that the Bone would scale.

It was often questioned whether the *Bark* would be of any Service, or whether a slight Salivation might not dispose the Humours to a better State ? But as one was rejected on Account of the Patient's strength being greatly impaired, and her being also inclinable to a Diarrhœa, so the other gave little Hopes of effecting a Separation of the Bone, though perhaps it might have given her more Strength, and might also have relieved the hectic Fever.

There remained yet one Help untried, and that, alas, was the only one, *Sea Water*, the
Power

Power of which in curing scorbutic, and chiefly scrophulous Ulcers hath often been tried by our best Surgeons ; therefore the unfortunate Maid was carried to the Town of *Newport* in the *Isle of Wight*, which was not far from the Place of her Abode, and there directly laying aside all other Medicines but Asses Milk, she drank *Sea Water* in the usual Manner, which at first occasioned a Nausea and Thirst, as it commonly does ; but these Inconveniences soon vanished, in two or three Days. This purged her at least thrice a Day ; nor did she perceive her Strength or Appetite impaired by repeating this Purgation, but rather daily improved. Growing cheerful upon this, and bolder with the Hope of Recovering her Health, she bathed in the Sea, first only twice a Week, then three times, and at last every Day ; and always after bathing in the Sea returned home with more Strength and Spirits. But not to detain you any longer by Particulars, after four Weeks resolutely spent in drinking and bathing, the Appearance of the Ulcer was changed for the better, the thin, foetid, sanious Matter, that daily flowed from it in large Quantities, now was turned to a white thick Pus, without any Smell, and not in such Quantity as before ; the Edges appeared soft, even and depressed, and at length, by good Fortune, the corrupted Part of the Bone, which began to shake upon the Touch of the Probe, was entirely separated from the sound Part. From that Time all Things went on successfully ; the Cavity of the Ulcer seemed to decrease more and more every Day, the white bluish Edges growing closer together, and drying up, and at last, in three Weeks more, was covered with a firm Scar,

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The young Lady being sensible of her returning Health, used to appear publickly every Day, and go into Company, and enjoy the Pleasures of her former Life : And though she was confined almost a whole Year by a grievous Disease, in a languishing Condition, which could not be worse unless she had been entirely confined to her Bed ; yet upon recovering her Strength, her Charms shone forth with a new Bloom of Youth ; and I may say she rose from the Sea like *Venus* adorned with the utmost Graces and Beauty.

This is what I have to communicate to you at present, most accomplished Sir, and will not detain you any longer ; for I should think myself unjust to Mankind if, by these Trifles, I should take up any more of your precious Time, which is so happily employed in the Service of the Diseased. Continue to give Health to suffering Mortals ; and continue to improve our Art with your Genius, to illustrate it with your Writings, and to support it with the Fame of your Reputation ; in the mean Time, pardon my Boldness in venturing to say any Thing of Medical Matters before so great a Judge.

Farewel, worthy Sir, and condescend to receive me into the Number of your Friends, who shall always have the greatest Respect and Esteem for your Merit. I am, &c.

Christ-Church, Oxford, March 1, 1749.

Dr. RUSSEL'S Answer to Dr. LEWIS.

Most accomplished Sir,

I Readily send you the Case of a *scrophulous Caries of the Leg*, which I intended to add to the several Cases before collected ; but how it came to be omitted I cannot recollect. I was willing

willing to give this also into your Hands, that you might know what this Method will effect in a Hectic Fever, arising from morbid Glands, when the purulent Matter is ejected by spitting. Indeed an Exfoliation seems to be assisted by a Derivation of the Humours from the Part affected; for thus the Bones are not so much moistened by a constant Flux of watery Humours, and the drier they are, so much the easier do they scale.

A Lad about twelve Years old (whose Brother is mentioned in the 31st Case) was reduced to the last Extremity by a Hectic Fever; he had a Cough and Night Sweats, with a Difficulty of Breathing upon walking; he had a foul and purulent Spitting; the Glands of his Neck were morbid and hard; and there was an Imposthume upon each Leg, with a Caries or Rottenness of each Fibula (the smaller Bone of the Leg) near the Heal. This Boy, when he first drank the *Sea Water*, was wasted to a surprizing Degree; but when he had used it six Weeks the hectic Fever abated, the Cough and Night Sweats went off, and no fresh Tumors rose. While he continued drinking *Sea Water*, the Bones of his Legs scaled, and the Tumors of the Glands were entirely dispersed. In six Months he grew well, and from that Time he has had no Sign of a Relapse.

Will you also give me leave to declare my Sentiments upon the general Cause of morbid Glands, I know you will easily grant it me, and I take the Liberty which your Candour affords me.

It appears to me that Parents most commonly have Children that are like themselves in Constitution. The Children of those Parents that are of a lax Habit of Body, are also weak and infirm; whence

whence it happens that the Glands are subject to the same Fluxions that I suppose are in their Parents. And therefore I do not think the King's Evil arises so much from a certain Infection, or hereditary Taint, as from a weak and bad Tone of the whole System of the Glands. And this seems to me to be the Fact; but as this is merely a *Theory*, if others are of a different Opinion, I do not set so great a Value upon my own as to contend stiffly about the Matter. But this is certain beyond all Controversy, that the Glands, by Reason of their loose and weak Texture, are more subject than other Parts to repeated Attacks of the Disease; not to say that many of them sometimes seem to be quite incurable. Moreover, when there is a Redundance of any thing in the Body, which hath been a long time discharged by this or that Passage, by the Aid of some Secretion, which by Custom, is made as it were a Law, then it is evident that there is necessarily a Decrease of the Secretions of the other Glands, which threatens some Danger to those Parts. Whence in some Leprosies, both dry and moist, which I could never cure by *Sea Water* or any other Medicines, I observed that the Patients, for the most Part, while the Disease is thrown out by the Skin, had a less Flux of Urine, (like those who are inclined to a Dropsy) and that all other Secretions had not their usual Freedom. And indeed in these most severe Disorders of the Skin, there is sometimes not the least Hope of a perfect and established Cure: For the Evacuation which has continued so long by these Passages, having broken, or very much weakened the Tone of the Part, upon the first Plenitude that happens, the Disease flows again the same Way; as in a

Gonor-

Gonorrhœa, where the Glands are changed from certain other causes. But if we do but rightly touch upon the History of Leprosies, I think it will easily appear, that the cutaneous Glands were not destined for such a considerable Work as is required for carrying off these Diseases. They seem plainly to me to be formed for Assistances, which, whenever the other Secretions are by accident obstructed, might administer their Help; and having performed that Office, they ought to return to their natural Form by their own Elasticity, and be entirely restored; for whatever Part of the Body is a long Time more distended than the Laws of Nature permit, is evidently morbid, and liable to Obstructions and Tumors, and such like Disorders: And that the warmer Countries are more infested with these Disorders than the cold, there can be no room to doubt, if we give Credit to Authors, who describe the Northern Leprosy as being less virulent, nor accompanied by such Variety of Miseries as the *Leprosy*, or *Elephantiasis* of the *Greeks*, which, though it is quite unknown in *Europe*, yet where the Fluids are more attenuated by the Heats of the Sun, and the Evacuation by the Skin is more copious, as in *Egypt*, it is common, and the Vessels of the Skin being at length obstructed, it rises to a greater Height.

I have lately undertaken to cure, for the first Time, a Boy troubled with the *American Evil*. His whole Head is covered with a Kind of Tumors like Mushrooms of a dark brown Colour, his Neck is full of hard scrophulous Glands. The Disease is called the *Yaws* by the People in *America*. The Cure has hitherto baffled all Endeavours of the Physicians at *Jamaica*, and here
also;

also; but because the Medicines I have used but a short Time have a good Effect, I have Hopes of performing the Cure. But you shall be acquainted hereafter with the Success of this uncommon Case, and indeed it is entirely new. It is not long since my Friend Dr. *Wilmot*, with his usual Courtesy, hath kindly communicated to me some Extracts from *Scribonius Largus*, which relate to my Method, by which it appears, that *Scribonius* made use of *Sea Water*, to disperse Tumors of the parotid Glands behind the Ears, before they had suppurated. He says, *Having dipped new Sponges in hot Sea Water, and wrung them in a Linen Cloth, let the Parotides be fomented with this Medicine, and afterwards covered over with sulphurated Wool.* See *Scribon. Larg. Chap. 6.* Then in the 41st Chapter, where he speaks of both Kinds of the Gout, the hot and cold, we find the following Words, *When the first Violence of the Fit is over, both in this and the former Kind of the Gout, the Parts are to be long fomented with warm Sea Water: But if this cannot be had, put Salt into hot Water, and afterwards use the Epithem before prescribed; for it carries off the Remains by Perspiration, and strengthens the Nerves for the future, and prevents their being easily vitiated.* It is certain, that *Sea Water* is a very powerful Discutient, and I am persuaded that this Quality is chiefly owing to its Sulphur and Bitumen. *Bolducius*, writing on the *Bourbon Waters*, thinks they contain a mineral Sulphur, or rather Bitumen, which is communicated to them by the Sea Salt, which is evidently found in these Waters, (for Sea Salt always contains more or less Bitumen) and which the Alcalies that abound in these Waters preserve in a fluid State.

State. In the same Place he gives a Method of separating them. The Separation of these Alkalies is performed by Spirits of Wine infused in the lowest Parts of the Water, in which there is the greatest Quantity of these Substances. The Alkalies sink to the Bottom, and the Bitumen, being separated, ascends in Drops to the Surface of the Water, or cleaves to the Sides of the Vessel. *See the History of the Royal Academy of Sciences, Anno 1729, p. 33, 34.*

This does not only confirm, that the *Sea Water* contains a pretty large Quantity of Bitumen, but likewise shews us, in some manner, what we are to expect from its Assistance.

I received your two Cases, which are wrote with you usual Elegance, and thank you for not deferring to send them, and would have returned the Obligation, as well as I could, by the Case of a Caries on the Shin Bone, cured by *Sea Water*, if I had not received it too late to be inserted in this Edition. Improve, in Virtue, most friendly Sir, and go on to cultivate the Art of *Healing*, which you have undertaken, and raise it to the highest Degree of Perfection; * *and may you always keep in View that Mortality, which you are sure of escaping by this single Monument.* I repeat my Wishes for your Welfare, and that you may always continue your Friendship for him who will always bear you the greatest Affection.

I am, &c.

* *Pliny's Epistles Book XI. Chap. 10.*

A
C O M M E N T A R Y
O N
S E A W A T E R.

Translated from the Latin of Dr. SPEED.

AS the Use of Sea Water is grown into Fashion, I thought it would not be improper for me to make Enquiries into its Nature; especially as many Patients flock down to *Hampshire*, I determined to try Experiments on the Waters that wash the Shores of that County.

E X P E R I M E N T I.

1. I procured half a Pound of Sea Water from the South Side of the *Isle of Wight*.

2. I got another half Pound from the Shore of *Southampton* at the Time of the *Spring-Tide*, which happens soon after the new and full Moons.

3. Likewise another when the Moon was in the first and the last Quarter, that is, at the
L Neap-

Neap-Tide. The Weight I made Use of was not that of the Apothecaries, but Averdupois, the half Pound containing eight Ounces. I evaporated each with a gentle Sand-heat, and when the watery Particles were flown off, there remained behind two Drams * and eight Grains of that from the *Isle of Wight*. That from *Southampton* at the Spring-Tide left the same Quantity; and that at the Neap-Tide two Drams and two Grains. In the Reflux of the Water there wanted ten Grains in that of *Southampton* at the Neap-Tide. However, it is proper to take Notice, that when the Tide is out there is not Water enough to bathe in, the Shore being left naked; but when the Tide is in, it is otherwise. Besides, the Place to be chosen for bathing is of no great Moment, provided a Pound of Water contains a little above an Ounce of Salt, which must be weighed while it is dry, and before it attracts the Moisture of the Air.

The Mass remaining after the Evaporation of the Sea Water was of a whitish Yellow, and of a bitterish salt Taste. Its Particles assumed no particular Figure, unless a few Grains at the Bottom, which seemed to be cubical; for Sea Water contains an earthy fabulous Substance, which those that make Salt can *Scum*, which hinders the CrySTALLISATION. Nor can the Salt be granulated before it is freed from this Substance. There is not above seven Grains of this in every Pound.

The Solution of the Remainder of this in Rain Water, after the Fæces above-mentioned had

* The Doctor should have told us what Drams he means; we suppose it must be Apothecaries Drams, as appears by what follows.

been separated by Filtration, was of a yellowish Colour, and being placed in a very gentle Sand-heat, there appeared Cubes on the Surface, which being perfectly formed, fell to the Bottom. As the Evaporation went on, the Liquor became gradually more yellow than it was before. And here it will be proper to observe, that though Salt Water is so entirely mixed with the Fæces, that they will both pass through the Filtre together, yet the Case is otherwise after Evaporation, for then it will not unite so intimately with Water, as it did before.

EXPERIMENT II.

When this yellow Liquor, which *Hoffman* calls the Lye of Salt, ceases to yield any more Cubes, the Surface by the Continuance of the Heat will begin to be covered with a white Crust; which being removed from the Sand, and set in a dry Place, it shot into prismatic Crystals, assisted by the Help of the Sun and Air in the Summer Time. Those Crystals being purified by a fresh Solution and Crystallisation, they became the cathartic Salt of the Shops, commonly called *Epsom* Salt. *Hoffman* asserts that this Salt is not to be made without the Addition of certain other Salts to the Lye*; but in this he is mistaken, for Experiments shew the contrary.

There is nothing in Nature attracts the Air so much as this *Lixivium* of Salt, for if it be calcined to the Hardness of a Stone, and afterwards exposed to the Air, it will readily melt. This Liquor, which contains *Epsom* Salt, being mixed with Urine, and sublimed, after the Effervescence

* Obs. Med. Chym. Pag. 198.

is over, will produce Sal Ammoniac, as some of the Makers of Salt affirm.*

When all the prismatic Salt was taken out, which was about two Drams, there remained in the Bottom a brownish insipid Fæces, with a very little insipid Water †, void of all Bitterness. Therefore they seem to be in an Error who assert the Bitterness of the Sea Water arises from Bitumen, unless there is any such Thing as a bituminous Salt, which those whom it concerns may endeavour to find out.

EXPERIMENT III.

I suspected that these Fæces were much of the Nature of Lime, and therefore I dissolved Sal Gem. in Lime Water; and I evaporated the Solution in a Sand-heat: Towards the End the Liquor began to turn yellow like the former Lye, which is not the Case when the same Salt is dissolved in pure Water. You may consult

* Take of the Lixivium of Salt, a Gallon, of Urine three Gallons; mix them, and let them stand in a Leaden Vessel forty-eight Hours to ferment. Then evaporate to a Dryness, and sublime what is left according to Art. This is the Method of making Sal Ammoniac, as was communicated to me from the Salt Works near *Newcastle*.

† These insipid Fæces and Water were obtained from Sea Water, which I evaporated myself, and which was deprived of all the common Salt. But the Remainder of other Lye, which I had from the Salt-works, had a saltish Taste. For which Reason I conclude that the *third Salt*, which is said to be in the Lye in the *Philosophical Transactions*, is nothing else but common Salt, which being dissolved all together with the Lye, as is rightly described in the *Limington Process*, No. 377.

Dr.

Dr. Grew's Treatise of the *bitter purging Salt*, which entirely agrees, as I have learnt by Experience, with the *bitter marine Salt*.

From what has been said it appears that Sea Water contains, 1. Common Salt, which all agree is drying, and, as *Hippocrates* affirms, renders the Body costive. "Those Men are deceived and ignorant of the Nature of Salt Waters, who believe they are purging; for they have directly the contrary Qualities; nor are they digestible while they are crude, and rather bind the Body than open it." *

This I imagine should be understood of Waters that are saturated only with common Salt, as those in *Cheshire*, *Worcestershire*, and in several Parts beyond the Seas. Those that live upon salted Meat are generally costive, which perhaps would not be the Case if the Makers of Salt were not too careful in separating the common Salt from the bitter Lye, which abounds with the purging Salt: For Flesh Meat salted with Bay Salt is not rendered so very hard, because it has a Mixture of this bitter Salt.

2. Bitter Salt, whether diuretic or cathartic, is very good to open Obstructions, as being the most penetrating of all Salts, except those that are corrosive. Hence the Virtue of Sea Water is principally derived, of purging both by Stool and Urine, as well as that of opening the Obstructions of the Glands, I mean when taken inwardly.

I have often freed Boys from the Obstructions of the Mesentery, by the Use of *Ens Veneris* or the Martial Flowers, with *Æthiops Mineral*, purging them now and then at proper Intervals

* *De Aer. Loc. & Aquis*, cap.

with Calomel and Rhubarb ; and no doubt others have done the same Thing. Now as Sal Ammoniac is a principal Ingredient in the Martial Flowers, and if it contributes any Thing towards the Cure of these Disorders, we must remember that it is made of Urine and the bitter Lye which contains *Epsom* Salt. And whatever Virtue Sea Plants may have when given as Medicines, Sal Ammoniac has the same when united with Deobstruents ; for Instance, Cinnabar of Antimony. But then, if the Patient is of a cold Constitution, instead of giving crude Sal Ammoniac, it will be best to substitute the Martial Flowers ; and if with either of these the diseased Person has been purged between whiles, I have known the strumous Swellings to disappear sooner than by drinking Sea Water. This is no uncommon Practice, for the *Persians* are not unacquainted with this Salt in the Cure of the King's Evil, because it enters internal Compositions intended against that Disease, as appears from their own Dispensatory, No. 20. and 126.

3. Both the *Fæces*, that is, the first that hinder the CrySTALLISATION of the Salt, and the second which remain after the CrySTALLISATION of the purging Salt, seem to me to be of the same calcareous Nature.

Heister, a Writer in Surgery of the first Class, in many Places advises a Mixture of Sea Water or Brine, with discutient Cataplasms and Fomentations.

The Ancients were very cautious in giving it internally, and *Dioscorides* acknowledges Sea Water was given internally as a Purge by itself, or with Oxycrate, or Wine, or Honey ; but then

then when it began to work, the Acrimony was to be mitigated with Chicken or Fish-Broth.

His Composition, which he calls *Thaffomeli*, he directs to be made with equal Parts of Honey, Sea and Rain Water, which is to be clarified, and then be set in the Sun in a pitched Vessel, during the Dog-days. He likewise recommends Wine * made with Sea Water to purge the Body, to help those that spit purulent Matter, and those that are colicive: As also to relieve those who have Disorders in the Head from drinking *Armenian* Wine. But then it is an Enemy to the Stomach, and generates Wind, as the same Author affirms. In the first Book *de Parabilibus*. if *Dioscorides* is the Author, he affirms that Sea Water drank with Oxy-mel will break internal Abscesses.

Paulus Aegineta † takes Notice of both the Methods of using it, and says, that “ Sea Water “ is acrid, and moderately heating and drying. “ That it is prejudicial to the Stomach when “ drank, raises Commotions in the Belly, and “ brings away Phlegm. That being applied hot “ externally, it is drawing and discutient.”

When a chronic Disease is not hereditary, or contracted by any evident Cause, I suppose it makes its Progress in the following Manner. First of all insensible Perspiration is obstructed from the frequent erroneous Use of the fix Non-naturals, and the digestive Power of the Stomach begins to grow languid: Hence the Aliment is imperfectly digested, and a viscid Phlegm, by little and little, adheres to the Stomach and In-

* Med. Mater. lib. v. cap. 23.

† Lib. vii. Cap. 3.

testines; and when these are beset with Phlegm or viscid Excrements, there can be no due Secretion by the intestinal Glands, insomuch that a crude Chyle is carried into the Blood, whence its Temperature being vitiated, its Circulation through the capillary Vessels will be irregular, as well as the Secretion of the Humours through the Glands of the whole Body, especially the least, and of the nervous Fluid by the Brain.

When Things are in this Situation, those who have strong vital Stamina may, by their Means, keep off the impending Disease for some Time, thinking they have no need of the Physician's Help. However at length, though by slow Degrees, some chronical Disease appears, but of what Kind, perhaps, may be learnt from the Nature of the first Error, or the Patient's Diet and Way of Life, or from his having something particular in his Constitution.

When the Rickets and King's Evil are not hereditary, they arise from Errors in Diet, or from the over Care and Tenderneſs of the Parents, or from the Omission of timely Remedies, when the Bodies of little Infants are subject to various Obstructions, and fall into one or other of these Diseases.

When the Habit of Body is plethoric, acute Diseases are commonly generated. And yet in phlegmatic Constitutions, this Habit may produce Infarctions of the Bowels, and the Symptoms of certain chronic Diseases may be exasperated.

It is therefore no Wonder that the Medicine that carries Phlegm from the Stomach and Intestines downward by its internal Use, and reduces the Circulation of the Blood, and the Secretion of the Fluids to their natural State by its external

ternal Use, should be proper for the Cure of these Diseases before they have taken too deep a Root, especially since they strengthen the Body at the same Time, when bathed in, or applied by Way of Fomentation to any particular Part.

What the Ancients speak of the discutient Virtue of Sea Water, may be referred to its external Use; and as, when drank, it almost comes in Contact with the intestinal Glands, thereby opening their Obstructions, it may be said to act as a Topic in that Respect.

However, we ought to be cautious in the Use of Sea Water, either Way; for those who are of hot Constitutions should never drink it, for it corrodes the Intestines of such, and by a constant Use punishes them very severely.

Not that there is any Thing deleterious in Sea Water, but because it is unfriendly to Bodies thus constituted. Likewise those should abstain from it, who are hectic, who are subject to Looseneſſes, and who are disordered after taking a Purge.

I have known that Sea Water would not purge at all, and then it created a very great Uneasiness in the Stomach, which did not cease till the Patient had taken a gentle Cathartic. Others, who have drank it unadvisedly, have been by its Acrimony thrown into an almost incurable Looseness, and which has sometimes proved fatal.

It will gently open the Bodies of the Phlegmatic, strengthening the Stomach, and restoring its Heat, when it has been oppressed by a Load of Phlegm, and will revive the Appetite, provided the Dose is not too large. Half a Pint of Sea Water drank at Night going to Bed, and repeated

peated in the Morning, is generally enough for Adults. But the Dose is best determined by its Effects. It causes a very urgent Thirst in many, though not in all. But for what Reason some Physicians purge their Patients who are going to be purged by drinking the Sea Water, or why prescribe the drinking of it to all who use it as a Bath, let them answer; it is none of my Business.

The Physicians of our own Country have written very accurately of cold Bathing, without depreciating that in the Sea. But for my Part I think the latter is much preferable to the former, because the specific Gravity of the Sea Water is increased by the Salt. Besides the Salt, as a *Stimulus*, is an efficacious Cleanser of the Glands of the Skin, and those who come out of the Bath perceive a Kind of Firmness with Heat over the whole Surface of their Bodies, which is a Forerunner of re-established Health. But if this Heat does not come on spontaneously, it is to be procured by moderate Exercise. Besides, it receives a remarkable Increase of Virtue from the purging Salt, which *Floyer* affirms to be the very Nitre wherewith the cold Baths of the Ancients, so much cried up, were saturated.

Sea Water therefore is not simply a cold Bath, but a *cold medicated* Bath. But whatever Virtues this Water may have, we cannot so exactly calculate its Force, as to determine what Number of Immersions are sufficient for the Recovery of any particular Patient. Yet many are so silly as to expect this, and sometimes Physicians are so rash as to pretend to comply with their Requests.

What

Whatever Precautions the Authors above cited have recommended to be used in cold Bathing, the same are to be regarded in bathing in the Sea.

Oribasius observes, that “ whoever intends to bathe should have his Body well rubbed before hand, and that he should plunge into the Water at once.” To this may be added, that a Patient subject to an Erysipelas will, by bathing in Sea Water, cause it to return ; I remember two remarkable Instances of this Kind. One of the Patients not believing that Sea Water could have any such Effect, would need bathe in it again soon after his Recovery, which caused the Erysipelas to return. This was repeated three Times with the same Success. The other, after having been once punished, desisted. *Prosper Alpinus* formerly observed from the Writings of the Dogmatics, that Sea Water was prejudicial to an Erysipelas. I suppose he means when used externally.

Sea Water used hot is of very great Service to soften Tumors, and in other Cases as a Topic ; as has been found by Experience, supported by the Authority of *Hippocrates*, which surely will serve to strengthen my Testimony.

I shall proceed to mention the particular Diseases in which Sea Water is beneficial, without entering into a particular Account of the Disease, any farther than the Method of Cure by this Means ; for we ought to suppose that the pharmaceutical Cure is well known to Physicians. Perhaps some may think I have not given all the necessary Cautions and Directions that might have been expected for the Exhibition of this Remedy ; but this I have done designedly, because

cause there are so many Things to be left to the Judgment of the Physician who is consulted, that scarce any Rule can be laid down, from which it will not be necessary sometimes to recede. But whoever is acquainted with the true Principles of Medicine, and takes Notice of the Cautions abovementioned, will be able to apply the following Observations to each of his Patients in a judicious Manner.

Of the SCROPHULOUS DISEASE,
or the KING's EVIL.

THE King's Evil proceeds from a fizy cold Matter obstructing the Glands, rendering them almost of a scirrhus Hardness. These are often inflamed, and turn into Ulcers that will hardly admit of a Cure. The Cause of this seems to be, if you will form a Conjecture, from the Obstruction of the excretory Tubes of the Glands, by the Matter to be secreted becoming too thick. The Inflammation is excited in the Vessels that nourish the Glands, which are so small that they are unable to excite Heat sufficient to digest and turn into Pus the thick Humour which obstructs, and has greatly increased the Volume of the Gland, insomuch that Nature wants the Assistance of Art to attenuate sufficiently these gross Humours.

I have seen many Patients relieved, and some cured, by the joint Operation and Use of Sea Water exhibited internally and externally; which many when they have drank have thrown up again, or have been purged by it so as to bring
away

away a great Quantity of Phlegm. Besides, by the long Use of cold Bathing, Embrocations and hot Fomentations, the Humours have been attenuated, and the Swellings dispersed; likewise the Ulcers have been brought to heal sooner by these Means.

The Ancients have said nothing of its internal Use in the Cure of this Disease; but the Author *de Parabilibus* has asserted, “that sweating procured by Sea Water will disperse stumous Swellings.” And *Marcellus Empiricus* informs us “that Snails that are found near the Salt Works, being bruised with their Shells and laid on stumous Swellings, will certainly heal them,” which I imagine to be owing to the Salt, which they have imbibed. Among the Moderns, *Fabritius ab Aquapendente* praises a Remedy which he affirms has a wonderful Efficacy in curing ulcerated stumous Glands. Now almost a fifth Part of this is common Salt. The following Cases I take to be very remarkable.

C A S E I.

A Clergyman in *Oxfordshire* was strangely afflicted with scrophulous Ulcers and Swellings. He had used all the Helps from Surgery and Physick a long while in vain. At length he went annually during three or four Summer Months to drink and bathe in the Sea Water, from which he found Relief without taking any other Medicines. But as his Affairs would not permit him to stay long enough to perfect the Cure, the Disease gained Ground every Year, notwithstanding

standing he constantly drank the Sea Water at Home. But when he returned to bathe in it, he always found himself better.

C A S E II.

A Girl from *London*, about twelve Years of Age, had her Eye-lids, Nose, and upper Lip infested with a Swelling and Redness. Besides the Glands of her Neck, between her Ears and Clavicles, were swelled and hard. She had taken many Medicines, according to the Advice of the *London* Physicians, and at length was brought down to *Southampton*. I directed her to leave off all Remedies, and to stick to bathing in the Sea Water, to drinking it, and to hot Embrocations therewith. After some Time the Disease began to give Way, and in sixteen Months, by persisting in the same Method, she grew perfectly well, and returned Home.

Of the S C U R V Y.

IT is hard to say what is meant by the Scurvy among the Physicians of this Age, for all Diseases of the Skin are distinguished by this Name, because it sounds better in the Ears of the Delicate, than the Itch, the Leprosy, or the King's Evil. But these Diseases differ widely from the *Stomacace* or *Scelotyrbe* of the Ancients, which our elder Physicians affirm to be the true Scurvy. This is doubtless the same Disease to which Sailors

lors are subject, as well as the Inhabitants of marshy Places. The Moderns call it the Muriatic Scurvy, and the Chemists affirm it proceeds from an Alkaline Acrimony, for it may be cured by Acids.

But there is another Scurvy of a milder Kind, to which our Countrymen are subject, which tho' it apes some of the Symptoms of the above Disease, yet it may be borne a long while without any remarkable Inconvenience, nor does it proceed with the same Rapidity and Cruelty as the other, unless it be very seldom. But if any should affirm that it differs rather in Degree than Kind from the other, they are welcome to enjoy their own Opinion, for it is not worth disputing about.

This Disease, which I call a *milder Scurvy*, generally proceeds from Errors in Diet, that is, from eating salt and high-seasoned Provisions; as also from a Neglect of Exercise, without any Fault in the Air or Water, unless fermented Liquors may be reckoned as such. There is a great Variety of Symptoms, of which the chief are a Laxity of the Gums, a Lassitude of the Body and Members, especially in a Morning: An itching of the Skin, when the Patient is a little hot: Pustules, and Breakings out in the Skin of various Kinds, wandering Pains, and other Things which Practitioners are well acquainted with.

When this Disease attacks phlegmatic Constitutions, it is called the *cold Scurvy*: When it invades the bilious, or those of a hotter Temperament, it is distinguished by the Name of the *hot Scurvy*. Both are relieved by an Evacuation of the Intestines, but Sea Water is most suitable to the cold Sort. In the Scurvy, unless it is very
bad

bad indeed, recourse is generally had to some Doses of Manna and *Glauber's* Salt, with good Success. I never advised any of these Patients to drink Sea Water, because I have known the Symptoms of many exasperated thereby, especially the Eruptions of the Skin; nor was this done by driving the morbid Matter to the Surface of the Body, but by increasing the Disease by the hot Acrimony of the Sea Water. I dare not venture to affirm that this is the Case of all, for human Bodies are so differently constituted, that one Medicine cannot be depended upon to cure the same Disease in various Constitutions.

In both Kinds of this Disease the Blood is rendered less apt for Circulation and Secretion, especially by the Glands of the Skin. Hence bathing is proper for both, as I have known confirmed by a Multitude of Examples.

What Sea Water will do in the Cure of the Scurvy in Sailors, I know nothing from Experience, and without that all Conjectures are frivolous and vain. But perhaps it may prevent this Disease in those who have regular Stools. What Good it will do in the Scurvy of inland Patients may be known from the following Cases.

C A S E III.

A Man about sixty Years of Age, who lived an inactive Life, indulging himself in eating and drinking too freely, was afflicted with various Symptoms of this Disease, particularly with purple or livid Spots on his Legs. After a long Use of Antiscorbutics, he betook himself at last to the drinking of, and bathing in, Sea Water, and by that Means got rid of his Complaints.

C A S E

C A S E IV.

Being called to a Man afflicted with the Scurvy, I removed all the Symptoms by the common Method, except a Condensation of the Skin on each Leg, with a kind of erysipelatous Eruption covered with a white Crust, and from whence a sharp Humour proceeded. I advised him to embrocate these Parts with hot Sea Water twice a Day constantly, by which Method he quickly recovered his former State of Health.

Of the P A L S Y.

THOSE who are afflicted with the Palsy have their Stomach and Intestines almost always covered with a viscid Phlegm, which being removed by purgative Medicines, the Patient sometimes suddenly recovers. Now the drinking of Sea Water is excellent for this Purpose, and I have known some greatly relieved thereby. When any Member is relaxed, bathing in Sea Water is proper enough; when a Limb is contracted I never could find it did any Good; for when the extending Muscles of a Limb are only relaxed, the contracting Muscles of the same Limb wanting their Antagonists, remain in a constant State of Action, and therefore that Limb will seem contracted, and the contrary. If this is the Case, the Limb may be extended with foreign Help without Pain. But if the bending or contracting Muscles are in Reality become stiff, the Limb cannot be extended without great Pain both in the Muscles and Tendons; and this Rigidity or Stiffness of the Fibres must be re-

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moved with Emollients, before bathing in Sea Water is attempted. When old Men are paralytic, or the Disease has continued a long while, the Patient cannot be restored to Health without great Difficulty.

Cælius Aurelianus, in the Chapter of the Palsy, advises Fomentations with Brine or Sea Water; as also swimming [or bathing] in the same. *Celsus* directs Fomentations with hot Sea Water, in the same Case, and, if that is wanting, with Brine.

Of the EPILEPSY.

YOUNG Persons have been cured of this Disease by bathing in Sea Water without drinking it. But then they have taken at the same Time cathartic and alterative Medicines, accommodated to the Degree of the Disease, and the Constitution of the Body, and this some Ages before *Æsculapius* had learned to quaff the Cups of *Neptune*.

Patients are very seldom freed from this Disease without the Use of the cold Bath, except those that by arriving at a riper Age are delivered from it spontaneously.

After a Fit is over, some Patients vomit up a ropy Phlegm, which, by creating an Uneasiness in the Stomach, perhaps was the immediate Cause of the Paroxysm. The Fits of Children who are loaded with viscid Phlegm, the Fore-runner of Worms, and whose Intestines are vellicated and gnawed by Worms, can scarcely be distinguished from epileptic Paroxysms. Cinnabarine, volatile, and fetid Medicines are very properly pre-

prescribed to attenuate this Phlegm, and on this Account they are good against the Epilepsy. *Aretæus* affirms the Contents of the Abdomen are sometimes the Cause of this Disease, and when that is the Case he advises such Medicines as purge Phlegm: Now Sea Water is of this Class, and not of the lowest Repute.

Bathing in Sea Water attenuates the Blood, strengthens the Solids, and by that Means renders the Circulation equal through all Parts of the Body, which is the chief Thing to be attended to for the Preservation of Health. Perhaps *Oribasius*, if his Translator has done him Justice, means epileptic Patients, when he mentions those who *morbo exagitantur*, and whom he advises to bathe in the Sea. The Ancients supposed the Cause of this Disease lay in the Head, and therefore *Celsus* advises to shave the Head, to anoint it with old Oil, Vinegar and Nitre, as also to foment it with Salt Water. I did not think it worth while to confirm a Thing so well known, with an Addition of Cases.

Of the I T C H.

Diseases of the Skin, says *Hippocrates*, such as the Leprosy, Itch, Psoa, &c. are generated by Phlegm. This Opinion is conformable to Experience; for the Itch amongst us, when it is an original Disease, and not caught, very seldom appears but among poor People, whose nasty way of living and low Diet bring on a pituitous Habit of Body: Now as far as Evacuations, by Stool, are concerned in the Cure, it may be performed by Sea Water; and yet this is not proper for all that are afflicted with this Disease. But Bathing

is of more universal Use, for it cleanses the Glands of the Skin by the stimulating Property of the Salt, and by dispersing the obstructing Humour, restores it to its Office, in which the Cure of these Diseases principally consists. Besides, Practitioners well know that nothing contributes to prevent Diseases of the Skin more than cold Bathing in general.

C A S E V.

An old Woman had been afflicted with a violent Itch for four or five Years, and had taken Variety of Medicines prescribed by Physicians to no manner of Purpose. At last she was sent to drink the Sea Water, which she did, and likewise bathed in it for the Space of three Weeks without any Relief: On the contrary, the Itch grew worse and worse every Day; besides, as the Sea Water made her Stomach very uneasy, I advised her to leave it off unless she was costive. After this she began to be better, and when she had continued bathing for about two Months, she returned Home quite free from the Disease.

Of the D R Y L E P R O S Y.

THIS Disease may be made to disappear by various Methods, and yet it is very apt to return again. I have known some relieved by the external and internal Use of Sea Water for the present, but some cannot away with the drinking it. Others, who have been cured by the taking of Shop Medicines, have been kept sound by constant bathing. And indeed I should not venture to promise any Patient that this Disease

ease would never return, if he was to abandon every Method of Cure.

C A S E VI.

A young Man had been troubled with this Disease some Years, and had the Advice of the ablest Physicians, to no Purpose. I gave him alterative Medicines, and a Purge with Calomel, every Week, which freed him from the Eruptions. Then I ordered him to bathe in the Sea Water, which he has constantly done for two Years, and continues pretty well, except a few Scales, which appear now and then, but without Itching, which formerly was exceeding troublesome. These disappear in a few Days.

C A S E VII.

A Man of an illustrious Family had his Body and all his Joints covered with white leprous Scabs. The Disease was hereditary, and he had taken Mercury, Antimony, Viper's Flesh, and other Drugs usually prescribed against it, in vain. It would sometimes disappear for a while, and would then return as fresh as ever. At length his Physicians sent him to drink Sea Water, which he did six or seven weeks before he bathed therein, without any Relief. But after he began to bathe in it, the Disease would give way, and the Scales fell off, which were sure to return when he began to drink it again. Wherefore he left off, the internal Use of it, of his own Accord, but continued his bathing while he staid near the Sea, which rendered the Disease more mild.

Of the R H E U M A T I S M.

DAILY Experience has taught me how far Sea Water will contribute to the Cure of the Rheumatism, especially that of the scorbutic Kind. It was frequently used in Diseases of the Joints by the Ancients ; and *Aretæus* informs us that cold Bathing in Sea Water was excellent for Diseases of the Joints. And *Cælius Aurelianus* advises, when ischiadic Pains are become inveterate, to fill a Bag with decrepitated Salt, and lay it to the Place, and afterwards to sprinkle hot Salt Water on the Parts affected. But perhaps this may more properly be referred to the genuine Gout than to the Rheumatism. The Precepts of *Oribasius* are likely to be more to the Purpose, when he advises bathing in Sea Water to those who are troubled with Defluxions in the Legs, or other Parts of the Body.

Of the B I T E of a M A D D O G.

IT has been customary for those who have been bit by a mad Dog, to go to be dipt in Salt Water ; and if it be done before the Patient is affected with the Dread of Water, it generally succeeds. After this it will do no Good, and no other Medicine can be absolutely depended upon. However it will be proper to use all Kinds of Assistance. I have in my Hand the Case of a Girl who had a pretty violent Hydrophobia from the Bite of a Cat, in the Year 1707. This was perfectly cured by repeated Scarifications, Bleedings; Blisters, Purges, and Sudorifics.

Of the RICKETS.

THAT this Remedy is proper for the Rickets any one may perceive, who will take the Pains to consult *Gliffon* on this Disease. Cold Bathing has been long in Vogue for the Cure of this Malady, and therefore bathing in Sea Water cannot but be very proper.

I have known a *simple Gonorrhœa* cured by bathing in the Sea, when it had eluded the Force of Balsamicks and Astringents.

It will likewise cure the *Whites* when they proceed from the Laxity of the Fibres.

Of the OVERFLOWING *of the* MENSES.

CASE VIII.

I Knew a Woman who laboured under an immoderate Flux of the Menfes, who if she happened to sail on the Sea had it suddenly lessened, and almost stopt. I advised her to bathe in the Sea, giving her at the same Time astringent Medicines, which she had taken formerly in vain, and by this Means she was cured.

I have known an *Obstruction* of the *Menfes* removed by drinking the Sea Water.

Of DISORDERS *of the* NERVES.

BATHING in Sea Water has afforded great Relief in Pains of the Head, Spasms, and Convulsions proceeding from Disorders of the Nerves, contrary to the Expectation of the Unexperienced. But I shall insist the less upon these

Things, because its Power is very well known in curing all Diseases of this Kind within the Reach of Medicine. Those which affect the Muscles of the whole Body, or fix their Seat in any particular Part, are of the same Kind. It would be needless to recount any Histories of Cases relating to so common a Remedy: However, the following is of so extraordinary a Kind, I could not well omit it.

C A S E IX.

About twenty Years ago, two Girls were at the same Time afflicted with a Relaxation of the Muscles of the Larynx, with a *Prolapsus* of the *Uvula*. They could neither of them speak a Word but with the greatest Difficulty, and every Time they drew in their Breath they made a Noise not unlike the crowing of a Cock. They were both restored to perfect Health by bathing in Sea Water.

Of the G R A V E L.

C A S E X.

AN old Man had been extremely tormented with nephritic Pains for above forty Years, and had taken every Remedy then in Use against that Disorder. At length he was so much relieved by the drinking of Sea Water, that he had spent the Remainder of his Life pretty easily, after the Use of it had brought away a great deal of Gravel, and many small Stones.

A SURGEON informed me that carious Bones had been exfoliated by means of Sea Water; but as it was used both externally and internally, it is uncertain to which Method this Effect may be attributed.

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The Ancients have recommended the Use of Sea Water in Distempers, in which it is now quite neglected, at least of which I have not experienced its Effect in the Cure.

An ATROPHY is sometimes a Symptom of a Consumption, Diabetes, the Scurvy, or an Abscess in one of the Bowels, and whenever this is the Case, Regard must be had to the original Disease. But when this is a Disease of itself, it may arise from a great Weakness of Digestion, or from a too free Perspiration through the Skin. The first Kind is mentioned by the Ancients under the Title of the Cachexy, which is produced by the said Disorder in Patients who receive no Benefit from their Food. In this Case *Cælius Aurelianus* recommends bathing in Sea Water, as well as *Oribasius*; and *Dioscorides* praises bathing in it when it is made hot. In the latter Case, when the Matter of insensible Perspiration is too great, bathing in Sea Water may strengthen the Glands of the Skin, and by that Means lessen the Quantity.

There is another Kind of *Atrophy*, to which Infants and Children are subject, which arises from an Infarction of the Mouths of the lacteal Vessels, by a viscid Matter, and from an Obstruction of the Glands of the Mesentery; whence these little Creatures are almost starved to death, though they can swallow their Victuals very freely. This viscid Matter which obstructs the Lacteals may be readily carried off by drinking the Sea Water; and the Obstructions of the Glands of the Mesentery, if they are not become scirrhus, may be removed by the same Means. Likewise bathing in it may answer the same End as Frictions, so beneficial in this Disorder.

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If a NERVOUS ATROPHY, so called by the Moderns, is not one of the former, particularly the cachectic Atrophy, I must confess I cannot tell what it is. For in all kinds of Atrophies, when the Nourishment of the Solids is impeded or derived elsewhere, the Nerves may be rather said to suffer by the common Disorder which injures the rest of the Body, than to be the Cause thereof: For an Obstruction of the Nerves produces Symptoms quite of a different Kind.

Sea Water is good for the Dropsy so far as it cleanses the Body from Phlegm, either by Stool or Urine. But I never thought it was a Purge strong enough to begin the Cure with. I have rather recommended bathing in it to perfect the Cure after the Waters have been evacuated, because I judged it too weak to be trusted to alone. However, *Oribasius* commends bathing in Sea Water against this Disease: And there is a Case in *Baynard* of a hard Drinker, who had a prominent Dropsy-Ascites, whom he sent to the cold Bath. But the Patient, of his own Accord, went to the Sea-side, and both drank and bathed in the Sea Water, returning in perfect Health. He likewise adds, that he had heard of several dropical Patients who had been cured only by drinking the Sea Water: But of this I have had no Experience.

Marcellus Empiricus, writing about the Gout, speaks thus, “ As soon as the Violence of the
 “ Fit is over in both Kinds [that is, the hot as
 “ well as the cold] the Feet must be fomented
 “ with hot Sea Water. But if that is not to be
 “ had, with hot Spring Water, in which Salt is
 “ dissolved.” For when a Fit of the Gout is
 off, the Joints of the Feet continue excessive
 weak,

weak, and it is very probable this Kind of Fomentation will restore their Strength.

Cælius Aurelianus recommends bathing in the Sea Water against a scirrhus Liver or Spleen, and, after the Tumor is softened, a Cataplasm with Salt. But I must own I have always been in great Doubt whether a scirrhus Tumor can be resolved or not.

Perhaps the Reader will think I have given a long Catalogue of Diseases that are to be cured by the same simple Method, which indeed is true, if he only regards the Names, but if he considers the Causes, he will find I have not mentioned too many.

From what has been said it will appear, that this Method of Cure is no Invention of the Moderns, but was known to the Fathers of Medicine while it was in its Infancy. However, I would by no Means have Patients or Physicians look upon it as a Panacea to be used unadvisedly in any Case, much less to recommend it as the *one Thing necessary* for those Diseases in which it is serviceable: For we should enquire into the natural Disposition of the Body of the Patient, as well as into the Genius of the Disease. Insomuch that we should not only consider what will cure this Disease, but what is most convenient for this Patient in this Disease at this Time; for I well know that some of these Diseases beforementioned, will sometimes want the Assistance of other Remedies; that many of them may be cured by other Methods, and that almost all of them are sometimes incurable.

However, the Use of Sea Water in these Diseases is not to be neglected; and yet to say the Truth, whatever peculiar Virtue the Sea Water
may

may have, it seems to me to depend entirely upon bathing; and its external Use. For you may remember in the first Case while it was used only internally, the external Use being omitted, the Disease grew worse. Likewise the Patients in the fifth and seventh Cases received no Benefit from drinking it, and bathing together; but as soon as the former was suspended, the good Effects plainly appeared. Besides, I never met with any Patient that was relieved by the purging Virtue of Sea Water, that would not have received the same Benefit from other Cathartics, appropriated to his particular Case, when the same Assurances were used along with them, I mean bathing in, and the external Use of Sea Water: For when the Humours are brought to such a State, as to be safely carried off by Stool, it is of little Consequence what Medicament is made Use of for that Purpose, provided a due Regard is had to the peculiar Constitution of the Patient, and the Nature of the Disease. But it may be done by other Means; it may be done by Sea Water in Cases wherein it is judged to be proper. But as for those it does not agree with, by creating an Uneasiness in the Stomach, there can be no Necessity of troubling them with it, especially in these Days when there is such an elegant Variety of efficacious purgative Medicines, which may be exhibited in different Forms, and which may be suited to every Disease in which purging is required. It was for want of such Advantages as these that the Ancients had Recourse to the internal Use of Sea Water.

But what I have said of the Virtue of Sea Water hitherto, is to be understood only of its purging Quality; for when cold Humours are to be defec-

deficcated, it may sometimes be more efficacious than other Purges. Besides, it is the mildest of all hot acrid Purges; likewise it may be looked upon as a warm diuretic : and from these two Qualities all the Effects of Sea Water taken inwardly may be deduced. I have sometimes tried what it would do as an Alterative given in a small Dose, but I never could perceive the least Advantage from the Use of it,

Thus have I said all that I intended concerning Sea Water ; and whoever will credit my Assertions, and attend to the Consequences that may fairly be deduced from them, will never have Occasion to repent. But if any Person should think all that I have said of no Value, he is welcome ; for I shall not endeavour to persuade him to the contrary.

I could have added a great Number of Cases to confirm all that I have advanced, but I thought it needless to stuff this Treatise with such a tedious Collection. Things that are true cannot be made more so by a Multitude of Examples. Besides, I was afraid of disgusting the Reader, if I insisted too long upon instances of this Kind, which related chiefly to my own Practice. And some would be apt to say I was writing a Treatise on myself, rather than Sea Water.

There may be some Things in which I seem to clash with Dr. *Russel's* Account of Sea Water, and some may think I have done it with Design. But this is so far from being true, that I had written the greatest Part of this Commentary before I had ever heard of Dr. *Russel's* Book or Name. But I could not help taking Notice while I was reading this Book, that though the Author says a great deal concerning the internal Use of Sea Water

Water, yet in all his Cases which he wrote himself, or received from his Friends, which he thought proper to publish, there are only four who experienced the internal Use of Sea Water alone, except one to whom it was given by way of a Clyster. In the rest it is joined to the external Use, to which the principal Effects seem to me to be owing, or else with other Medicines, which have been noted for their Efficacy against particular Diseases; and in most, both these Assistances were used. In the eighteenth Case, the Strength of the Disease was said to be weakened by Antiscorbutics, joined to the Use of Sea Water; for many Medicines had before been taken in vain, and, among the rest, Sea Water. Therefore I think we ought to attribute the Alleviation to the prudent Use of other select Medicines, which this Author employed, rather than to the drinking of Sea Water.

Nor does it sufficiently appear how much we ought to attribute to Sea Water in the other Cures, notwithstanding his Account of opening the Obstructions of the Glands is so very well written. He likewise affirms, that Patients may indulge themselves in the plentiful drinking of Sea Water, from the Example of a Woman who drank a large Quantity, *viz.* Twenty-five Gallons, without any Harm. Perhaps forgetting we cannot infer Universals from particular Cases. See Case 32.

I must needs own I have not been so fortunate as to make the same Observation, nor have I been so happy as never to have perceived any Inconvenience from the free internal Use of Sea Water. I entertained the first Doubt from the Correctors of the Medicines which are to be met with in
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the Writings of the Ancients. These were so well acquainted with their Effects on human Bodies, and have delivered their Observations so faithfully down to Posterity, that I rather believe they attempted to correct Sea Water from their Experience of the Inconveniences that attended the Use of it, than that they invented them purposely for the Sake of seeming to correct it. This I have often seen confirmed by my own Experience.

It is worthy Notice, that among other Methods of correcting Sea Water, that of *Dioscorides*, by keeping it some Time, is much celebrated. Wherefore those who live at a Distance from the Sea, are perhaps less liable to its bad Effects. But indeed the best Corrector is the Use of it prudently directed.

It is my Custom, if the State of the Disease will bear it, to abstain from all other Medicines during the Use of Sea Water; though I must acknowledge, that in some grievous Diseases, Helps of all Kinds should be called in. However, when you are trying the Effect of one Medicine, if another be joined to it you will not be able to judge to which of the two the Effect is owing.

Thus having taking Notice of the Nature and Principles of Sea Water, perhaps it will be no hard Matter to find out something that will supply its Place, particularly by dissolving Bay Salt in soft Water, or common Salt together with *Epsom* Salt, in due Proportions; as also Sal Ammoniac. I mention these Things for the Sake of those that live at a Distance from the Sea-side, and who, by their Affairs or Circumstances, are prevented from coming to such Places. But as
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for those who are willing to travel a good Way to use these Waters, or who live in maritime Places, it cannot be expected they should use any Succedaneum.

I shall now bid the Reader farewell, hoping he will receive Benefit from this Treatise in general; or at least that he will find some useful Hints whenever he thinks proper to drink the Sea Water.

A N
A C C O U N T

O F T H E

Nature, Properties, and Medicinal Uses

O F T H E

MINERAL WATERS

I N T H E

Different Parts of ENGLAND.

IN treating of the Mineral Waters, which are to be found in different Part of *England*, I shall begin with the most famous, and afterwards proceed to those of less Note, let their Efficacy be what they will. BRISTOL WATER is one of these, and proceeds from a Spring, not far from *Bristol*, which in that City is called the *Hot Well*: The Rock from whence it proceeds, stands on the North Side of the River *Avon*, and affords a romantic and beautiful Prospect. This Rock is of Lime Stone, as are all those called *St. Vincent's Rocks* in general, which is extremely hard; and Lapis Calaminaris, is found in plenty in the Neighbourhood.

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The *Hot Well* Water newly drawn is of a whitish Colour, at least sometimes, which it looses gradually as it grows cold, and many small Bubbles arise in it, after taken immediately from the Pump, for half a Minute or more, as though it were in a State of Fermentation, and these sparkle, and seem to bound therein. The Cause of this intestine Motion is supposed to be Air, or some other elastic Substance, because they roll over each other with great Facility, according to Dr. *Sutherland*, and preserve the Water from Putrefaction; though I must confess I cannot see how this should be a proof of his Assertion.

The Taste is exceeding soft, pleasant, and milky at the Spring Head, and very agreeable to the Stomach; but it leaves a sort of Stypticity on the Palate. It is entirely without Smell, and is only lukewarm to the Touch. It keeps well in Bottles that are well stopped, losing only a Part of the elastic Air, which flies off before the Corks can be put in. With regard to Chemical Experiments, if a Glass of Water is poured upon a few Grains of Sal Ammoniac, it immediately dissolves it, with a very sensible Effervescence. A few Drops of the Spirit of Sal Ammoniac, made with Lime, dropped into a Glass of Water, produces the same Effect. A Solution of any fixed alkaline Salt, dissolved by the Moisture of the Air, not only produces the same Effect, but renders the Water milky, which after it has stood a while, goes off, and leaves behind it a light earthy Precipitate. When Soap is dissolved, and some of it dropped into a Glass of Water, it immediately curdles, and into a short Time, the Surface will be covered with a greasy Substance; while.

while the Water below loses its Transparency, and becomes turbid. Oil of Tartar gives it a bluish white Cloud, and Spirit of Sal Ammoniac renders it white, as well as Lime Water. The Solution of Sugar of Lead precipitates a white Sediment, and that of Allum produces white Grumes, and a few Bubbles. Twenty Drops of the Solution of Silver, mixed with three Ounces of the fresh Water, in three Hours time, made it appear, as if a small Quantity of Ink had been dropped thereinto.

These several Experiments seem to declare, that there is some degree of an Acid, in the *Bristol* Water, though not discoverable by the Taste; or as others think a small Portion of Sulphur, which is no Contradiction to the former Supposition. This last Opinion is farther confirmed, because that when the Bottles wherein this Water is contained, happen to be broken, it will stink very much. However, some have affirmed, that if 15 Drops of Oil of Vitriol, be added to two Ounces of the Water at the Fountain, it discovers an infinite Number of extremely small Bubbles, which in a Minute or two disappear; and if 15 Drops more be added to the same Water, this Appearance will be renewed, and so on till the fifth or sixth Time; which is somewhat strange. It is hard to say, how this Ebullition should be produced, if this Water contains an Acid; besides distilled Vinegar will excite a very small Fermentation.

Galls added to this Water, will not turn it to a purple Colour, but it will be a little bluish near the Surface, which after standing three Days becomes Green. Dr. Browning has observed, that *Bristol* Water being frozen, and afterward

thawed, deposits a white calcareous Sediment, very much resembling the calcareous Earth contained in Sea Water. The Contents of a Gallon of this Water, is about 34 Grains, when evaporated the common way; but if the Water be drawn off in a Glass Retort, in a gentle Sand-heat, 56 Grains may be gained therefrom. This Sediment is of a light grey Colour, of a brackish Taste, which is bitter in the Throat; and which makes an Ebullition with Acids, and turns green with Syrup of Violets, after some Time; but if some of it be put on a red hot Iron, it sparkles, and has a stinking Smell.

The Salt that may be separated from this calcareous Substance is white; but it will not ferment, with distilled Vinegar or Oil of Sulphur. When thrown upon a red hot Iron, it rises in Blisters, and in the Air it grows damp. Dr. Keir affirms it will shoot into hexagonal Chrystals, interspersed with some that are cubical. The Earth separated from the Salt and dried, ferments with Acids, and by Calcination becomes Lime. The Proportion of the Earth to the Salts, in one Experiment was 15 to 11, and in another as 13 to 11.

Bristol Water differs from that of *Bath*, in its lightness, for it is but a little heavier than Rain Water, whereas the *Bath Water* is much heavier, and they likewise differ in their Virtues; for that of *Bath*, is a powerful Attenuant, deobstruent, and laxative, with a strengthening and heating Quality: But the *Bristol Water* thickens the Humours, and is astringent; and it is so cooling, that it is successfully prescribed in internal Inflammations, hectic Fevers, Coughs, and the Scurvy attended with Heat. It is also cleansing
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and balsamic, and these Qualities render it very useful in curing the Diabetes, as well as in all Obstructions of the urinary Passages from the Gravel. It does not lose these Qualities when it is brought to *London*, but it is most efficacious when drank warm from the Spring.

Bristol Water also promotes an Appetite and helps Digestion; and when it is drank it leaves no disagreeable Taste in the Mouth, as many Mineral Waters do. In the first Stages of a Consumption it is exceeding good, but when the Lungs are too far gone, the Use of it is to be avoided. When People drink this Water warm from the Spring at first, it proves an Astringent, and renders them costive; but this little Inconvenience is soon over.

Sometimes likewise it will occasion a sort of an Uneasiness in the Head, which has occasioned many to leave it off; but this bad Effect soon ceases, and its more salutary Operation will soon be perceived.

Others have left this Water off because they have received no immediate Benefit from it; not considering that the Effects of this Water are very slow; but then, when suitable to the Case, they are always sure. There have been some Instances of Persons who have left it off, and yet have afterwards found they have received Benefit from it, which has caused them to repent they did not continue it longer.

Physicians inform us, that the *Bristol Water* is good in Disorders of the Eyes, and will cure obstinate Ulcers therein; besides which, many with weak and inflamed Eyes receive great Benefit therefrom, if it be taken warm from the Pump in a Cup, and applied with a soft Rag. It has also

cured many scrophulous Ulcers, merely by washing them in this Water ; and, according to some, it has cured cancerous Ulcers, by daily washing the diseased Part with this Water, and fomenting it with Linens dipt therein, drinking the Waters daily at the same time. It strengthens the Stomach, quenches Thirst, cures Windiness and the Heart-burn. It sometimes throws out Pimples on the Skin, which is a certain Sign of its good Effect : and it cures all Sorts of Cholics proceeding from acrimonious Matter, when other Remedies have failed ; but it is most serviceable in hot and dry Constitutions. Sometimes it will bring on a Diarrhœa, which is probably produced by the Acidity of the first Passages, forming a neutral Salt with the absorbent Earth of this Water ; which likewise will sometimes happen in the Use of other Waters that are not purgative.

It has been found successful in the Bloody Flux, and in Ulcers of the Guts, Kidneys, and Bladder. It generally stops all Fluxes, and checks immoderate Secretions of Phlegm from the Lungs and adjacent Parts ; as also excessive Discharges from the Guts, Kidneys and Matrix. Thus it stops a Diabetes as before observed, a Fluor Albus, and a Gönorrhœa. However it is observable, that though sometimes it will cure a Diabetes in three Weeks, it sometimes will not do it in less than so many Months ; but it will make a perfect Cure at last.

It will stop Bleedings of every Kind from whatever Part they proceed ; it will also cure hectic Fevers from purulent Ulcers, whether external or internal, as well as Consumptions of the Lungs, if the Drinking of it is not deferred too long ;

long; though some have affirmed it has cured manifest Ulcers when the Body was wasted to a Skeleton, when nocturnal Sweats were produced, and when a Looseness supervened; but this may justly be doubted.

It has, as was observed before, been of great Service in the Gravel, as well as in the Stone and Stranguary, in the Scorbutic Rheumatism, and in red Pimples in the Face; as also in rheumatic and gouty Pains.

The Method of drinking this Water, when a Patient first comes down is to go to the Pump-Room in the Morning, and drink a Glass or two before Breakfast; and about five in the Afternoon to return and take another or two. The next Day the Patient takes three Glasses before Breakfast; and three in the Afternoon; and this he continues during the Time of his staying at the Hot Wells. These Glasses hold each a third Part of a Pint, and half an Hour's time is allowed between each Glass; during which time he either sits on a Bench in the Pump-Room, to hear the Music which plays every Morning, or else he goes out and takes a Walk on the Side of the River *Avon*, where he may see a great Number of Ships passing and repassing almost every Tide.

Besides the six Glasses, which is the usual Quantity every one drinks, some take a single Glass an Hour before Dinner; but this has not always the same Effect, for it creates an Appetite in some, and takes it away in others. Others again send for it to their Lodgings and drink it as common Water, either alone or with Wine; some make their Tea with it, and others make it the Basis of their Punch.

Some are apt to imagine, that when they have drank their three Glaffes in a Morning they fhall have no occafion for Breakfast; but this is a Miftake, for they foon find themfelves to have a very ftrong Appetite, and to eat a heartier Breakfast than at other Times; even People, in a bad State of Health, find themfelves much more hungry than before they began to drink the Water.

Bristol Water is undoubtedly beft when drank upon the Spot; however it continues good, when brought to *London*, or to any other Part of the Kingdom. It is never to be put into Cellars, nor any cold damp Place; for the warmer and drier it is kept the better. At the time of Ufe, it will be proper to put the Bottle, with the Cork taken out, as high as the Neck, in boiling Water, for a few Minutes, and then it will have much about the fame Degree of Warmth as at the Hot Well; and this not only renders it more agreeable to the Taft, but in fome Senfe reftores its Virtues. However there is one Advantage in drinking it at the Well worth taking Notice of; that is, it cofts nothing there, nor is there any thing to be done but making a Prefent to the Mafter at going away, and a Trifle to the Servants.

Mr. *Owen*, who acknowledges himfelf to be no great Philofopher, thinks the Virtues of the Water are not owing to the Solution of any Subftances therein; for when, fays he, many other Waters are examined by Evaporation, there remains a Salt which poffeffes the fame Virtues; or elfe an earthy Matter, to which they have in fome Degree owed that Origin; but nothing like this is the Cafe when we make the Hot Well Water a Subject

Subject of the like Experiments. When a Gallon of *Bristol Water*, continues he, has been evaporated, there scarce remains any thing perceptible in the Vessel; but in this he is much mistaken, as appears from the Account given above of the calcareous Earth remaining after Evaporation. But what he says of their Expedition in bottling the Water, and corking it instantly to preserve its Spirit; and the vast Quantities of Air Bubbles that rise in it, when fresh filled and exposed to the Sun, is certainly true; as also that it will not lather with Soap unless first boiled. He observes farther, that it is a most plentiful Spring, though, like most others, it falls in dry Weather. It is also observable, that they are obliged to leave off pumping a few Hours in the Day, for a Day or two before, and two or three Days after, every new and full Moon; because at the times of the Spring Tides, the Salt Water of the River *Avon* usually rises very high, so as to break into the Hot Well Spring. But when there has been much Rain, and the Spring is full, it in a great Measure resists the Spring Tides, and they affect it very little; however when the Season is very dry, and the Spring low, it hurts the Hot Well considerably; and yet by continual pumping, the Water will be rendered bright and pure again as at first. Upon the whole, the latest Writers upon this Subject have concluded, that besides the pure elemental Water, there is a volatile Spirit, a vitriolic Acid, a marine Acid, a neutral Salt, and an absorbent Earth.

Of the Waters of BATH in Somersetshire.

THERE are few Physicians that are ignorant of there being hot Mineral Springs in various Parts of the World, and that they were formerly thought to be heated by some subterranean Fire, or at least that they had a Passage thro' mineral Strata that were actually hot; but the latest, and perhaps the best Writers upon this Subject, though they do not deny a subterranean Heat, yet they believe it is owing to the Stone called Pyrites, which consists of ferruginous and sulphureous Particles. But this perhaps is not universal, because many of the Springs that are met with in *Naples* and *Sicily*, not far from the burning Mountains, most probably owe their Heat to the actual Fires that are kindled in the Bowels of the Earth.

They are of different Degrees of Heat, for some are only lukewarm, others will harden an Egg, and others will boil flesh Meat sooner than a Kitchen Fire. Some pretend that the Springs in *Ireland* are so hot, that they will boil a Piece of Beef in a Quarter of an Hour's Time, which is altogether improbable. What is said of other hot Springs is more likely to be true, namely, that they will kill any Animal that falls thereinto.

But whatever the Cause be of Heat in these Waters, it is certain it is not proportionable to the mineral Substances dissolved and contained in them; because some of them when cool are as clear and well tasted as any other Water, and as healthful to drink. However it is certain that many of these Waters are impregnated with Sulphur, Bitumen, Sea Salt, Natron, Earth and Iron, in various Combinations and different Proportions.

tions. This is partly evident from the hot Springs in some Parts of *Italy*, where Bitumen or Petroleum are often seen to swim on the Surface; and there are others which send off Vapours that will take fire if a Candle is held near them; but this last Circumstance is not always accompanied with hot or warm Water, since the Spring is often found to be actually cold. There is an Instance of this Kind at *Brosby* in *Shropshire*. Hence it appears, that nothing can be determined about the Nature of hot Springs in general, any more than concerning cold mineral Waters; for which Reason a-chemical Analysis will be always proper to determine their Nature in Part; for I am afraid it will be insufficient to discover their Nature so fully as to be able to determine their medicinal Effects therefrom.

A small Quantity of the *Bath Waters*, when viewed by itself, appears clear and transparent; but when beheld in the Bath, the Surface has a greenish Cast, or it is rather of a Sea Colour. The Smell is not very agreeable, especially of the hot Bath; and when it is quite fresh, it has a soft and milky Taste; but when carried to a Distance, it is somewhat nauseous and saltish. Dr. *Baynard*, who was sufficiently acquainted with these hot Springs, affirms, that in a great Drought, and when the Wind is about North East, the Water is somewhat acidulated with a volatile Gas, not much unlike the grateful Acid of the *German Spaw Water*.

The Country about *Bath* is very hilly and uneven, but the Hills lie pretty regular; and they are generally rocky and steep from South-west and by West to North-east and by North. The whole Face of the Country, within five or seven Miles,

Miles abounds with Coal Mines ; but there are no other, that we know of, any nearer than ten Miles distance, among *Mendip Hills*, excepting some of Lead at *Bury in Gloucestershire*, which lies to the North of this Place, about four or five Miles distant.

The Town and Baths are of very great Antiquity, insomuch that some assert, they were known Eight hundred Years before Christ. Some have affirmed, that the City is mostly built upon a Quagmire ; however this is certain that Mire has been found by digging, about ten Feet deep, without the North Gate ; and sometimes at seven or eight Feet they have met with Oyster Shells.

The Town and circumjacent Country generally abound with cold Springs ; and in some Places the hot and cold arise very near each other. In one Place they are within two Yards, and in others within eight or nine of the main Baths.

The Water of these Baths is said to be twenty-two Grains in a Pin heavier than distilled Water ; and that at the different Seasons of the Year, the Water of each Bath, when tried by a Thermometer, has always been invariably the same. But this is contrary to what the Guides have experienced ; tho' they perhaps will not be allowed to be sufficient Judges. There is one remarkable Circumstance, that this Water will keep its Heat, for seventeen Hours or longer, in a frosty Day, and when the Window is kept open all that time ; which Water heated to any Degree by Fire will not do. There is a considerable Difference in the Heat of different Baths, insomuch that some have observed, that a Patient can better endure to remain four Hours in the Cross Bath, than an Hour and a Half in any of the rest. The King's Bath
has

has so hot a Spring, that it can scarcely be borne; yet it is not hot enough to harden an Egg. Others say, that called the Hot Bath has so great an Heat, that it can hardly be endured; that the King's Bath is a Degree less hot, and the Queen's Bath moderate.

With regard to the Experiments made with it, it will, when carried at a Distance from *Bath*, precipitate Silver out of Spirit of Nitre, more than Salt Petre, into a hardish Curd, but not so much as common Salt; hence some conclude, that Sea Salt predominates in *Bath Water*. Dr. *Hilary* observed, that the Water of the King's Bath and Hot Bath turned the Solution of Silver white with a bluish Cast, which became gradually more dark coloured, and then deposited a dark grey Sediment. Likewise the Solution of Sugar of Lead precipitated a white Powder, intermixed with several greyish Spots. Add to this, that the Solution of *English* Vitriol exhibited a pearlsh Colour, with the King's Bath and Hot Bath, and both became covered with a thin variegated Pellicle, which was of a more purplish Colour with the Hot *Bath Water*.

With Oil of Vitriol and other Acids, the *Bath Waters* will excite some intestine Motion, and greatly blunt the Acidity. If one Part of boiling Milk be added to two Parts of *Bath Water*, a thin Whey and Curd will appear, if the Water be just taken up. A Dram of Syrup of Violets gives a grass-green Colour to an Ounce of the King's Bath, as well as of the Hot Bath, in twenty-four Hour's time.

Some Trials shew that there is a vitriolic Principle in the *Bath Waters*, but then it soon flies off; for if it be taken fresh from the Pump, especially,

especially in clear frosty Weather, Galls will tinge it of a purple Colour; but when cold they scarce make any Alteration at all. Each Bath will retain this purple Colour in Proportion to its respective Degree of Heat. *Charlton* has observed, that the King's Bath will take the Tinge as strong again, with the same Quantity of Galls, as the Hot and Cross Baths will do; and that Logwood will give a deep Violet with them all. The Water of all the Baths, kept twenty-four Hours in an open Phial, will loose the Property of being tinged with Galls, except in frosty Weather. But by dropping in Spirit of Vitriol, or Spirit of Sulphur, may be preserved for a great Length of Time.

It is generally thought to be owing to the ferruginous Principle of *Bath Water*, that it will make better and blacker Ink than common Water; and that the Sand kept a while, exposed to the Air, becomes vitriolic, and will make Ink with the Infusion of Galls. It has been generally said, that the *Bath Water* will turn Silver to a gold Colour; but this has been long discovered to be a Fraud, and that it has been done with stale Urine, or with the old Mud of pissing Places. This was formerly made use of as an Argument to prove there was Sulphur in the *Bath Water*; but there has been no Method found of separating or collecting any such Substance. However Silver, that was immersed a long while in one of the Springs, became first of a copper Colour and then black; and Pins that have been accidentally dropt have turned partly black, and partly of a gold Colour; but this is no more than what will happen in common Steel Waters.

It

It has been observed that Iron Bars, or any thing else made of that Metal, will be greatly corroded by Length of Time, which is supposed to be owing to a subtile vitriolic Gas or acid Vapour; and the Cross Bath has eaten so much of a Shilling, in a Week's Time, that it might be wrapped about one's Finger. That there is an Oker in this Water, appears from the yellow Colour of the Stones, in the Bottom of the Bath, and from the yellow Matter like thin Cream, found floating on the Surface of the Water, when at rest in the Winter Time. However this Oker evaporates in part, because it has been found sticking to Places exposed to the Steam of the Bath; and yet there is nothing of a yellow Colour found in the Sediment of the *Bath Water* after Evaporation.

It is concluded, that there is a Mixture of a calcarious Substance with the Oker, from the white and yellow Sediment deposited by the Water; from its growing white and turbid like Whey, from standing, and from the Earth which is like Lime, and which is found adhering to the Bottoms of the Canals that convey the Water. The Mud of the Water consists of a blue Clay, with some testaceous Particles; and when it has been used as a Cataplasm, it has somewhat of a Smell of Sulphur; and when rubbed on Silver it changes it black, according to *Charlton*. Likewise the Sand thrown on a red hot Iron, emits a blue Flame, with a sulphureous Smell, and on being exposed to the Air, becomes vitriolic; add to this, that if it be digested, for a few Days, in distilled Rain Water, it becomes possessed of all the Properties of a natural Chalybeate, according to the same Author.

It

It has formerly been disputed whether there has been any bituminous Matter in *Bath Water* or not; but later Authors are fully convinced that it has, from the Experiments they have made. The artificial Analysis commonly yields a little above two Drams of solid Contents, from a Gallon of Water, though it is taken from any of the Baths. Dr. *Hilary* obtained 155 Grains from a Gallon of the Queen's Bath Water; 139 from the Hot Bath, and 130 from the Cross Bath. The Quantity of a calcareous and argillaceous Substance is double to that of the saline; for the Quantity of Salts in each Gallon scarce exceeded forty Grains; and the rest of the Matter is a Grit, with a blue sulphureous Earth or Marle, according to Dr. *Hales*. This Gentleman obtained ten Ounces, and five Drams and a half of Sediment, from an Hoghead of *Bath Water*; but *Guidot*, in frosty Weather, got fifteen Ounces and six Drams from the same Quantity; of which, five Ounces and three Drams were Grit; two Ounces, a Dram and a half, a blue sulphureous Earth or Marl; and three Ounces seven Drams and an half were Salt. Of this more than two Parts in three were common Salt, and the rest Nitre. The gross Remainder emits a strong sulphureous Smell, with a blue Flame, upon Calcination; by which Operation a fourth Part of the Weight is lost by burning away. It appears that somewhat sulphureous adheres to the Oker, Mud and Sand, from the Observations above taken Notice of; and likewise the Lye of the Salts has a sulphureous Smell, and the Salts being melted emit a blue Flame.

From these Experiments it appears, that the Minerals in *Bath Water* consist of a calcareous
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and marly Earth and Oker, a marine or Sea Salt, a little calcarious Nitre, a Gas of Vitriol, a little Bitumen, and a very small Quantity of Sulphur, insomuch that this last can be made to appear no otherwise than by Consequences, or at least not much more.

In the Philosophical Transactions we are told, that the *Bath Waters* are useful in Diseases of the Head, such as Palsies, Epilepsies, and Convulsions; in Diseases of the Skin, as Leprosies, the Itch and Scabs; in all Obstructions of the Bowels, as of the Liver, Spleen and Mesentery; in Scirrhoties and Hardness of those Parts; in most Diseases of Women, and in the Scurvy and Stone.

It is now generally agreed, that the *Bath Waters* are a most powerful Deobstruent, and that their Energy is so great, and their Operations so sudden, that a very exact Preparation of the Body is required, and a stricter Regimen than in drinking other Waters. But be this as it will, it is most certain that Regard must be had to the Habit of Body, the Season of the Year, the Symptoms of the Disease, the Changes of Weather, and the different Degrees of Heat in the several Baths. As for Instance, the Heat of the King's Bath, without due Precautions, is apt to inflame the Blood, heat the Bowels, and sometimes to cause a Fit of the Gout. It is also said, that a Palpitation of the Heart is often increased by bathing; and that in a very hot Season, and in Cases highly scorbutic, with a hot and sharp Blood, bathing, except in the most temperate Baths, is commonly forbid.

The general Virtues of the *Bath Waters*, whether by bathing or drinking, are thus enumerated; externally they heat, dry, attenuate,
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resolve, and strengthen, and have a singular Efficacy in Diseases from a cold and moist Cause. They ease Pains, disperse cold Tumours, and dry up moist Ulcers; they are very advantageous in phlegmatic Diseases, and for cold, moist, and gross Bodies; and it is remarkable, that nothing more effectually prevents too great a Corpulency, than the frequent Use of these Baths.

This, as well as some other Mineral Waters, will cause a red Eruption and Roughness of the Skin not unlike the Itch, which by continuing the Use soon disappears. Bathing in them not only cures Contractions, but Relaxations of the Limbs, and restores lost Sense and Motion; but the Hot Bath and King's Bath are more strengthening than the Cross Bath, and fitter in cold Disorders and phlegmatic Temperaments. That frequent Bathing is salutary and strengthening, appears from the Guides, for they generally live to a great Age; and some have been an hundred Years old. It also appears from hence, that is, let two Children be taken, of equal Strength and Vigour, and let one bathe and the other not; and that which has bathed shall be able to walk better and steadier at a Year old, than the other at fifteen Months.

However it is observable, that Bathing is not proper in a Fit of the Gout; for if any one puts his Feet into a Bath, while it is upon him, it will cause it to rage much more, or will strike it in. However it may be of great Service in the Decline of the Gout, because it prevents the Fixation and Concretion of the gouty Matter, and strengthens the Part. It also is highly serviceable to those whose Sinews are impaired and crippled by severe Fits and their frequent Returns.

These

These Waters being taken internally, in large Quantities, that is, to two or three Quarts, will commonly give two or three Stools extraordinary. This is remarked particularly of the Hot Bath, that it generally keeps the Body open, while the King's Bath has a contrary Effect. When they are drank quick, and not thrown up again, they purge most and pass soonest; but if taken slowly they are longer in passing, and are mostly discharged by Urine, and sometimes by Sweat. In some they will not pass off till Midnight, and yet with very good Success; they are observed to quench Thirst, which they will do more certainly than double the Quantity of any other Liquor. They affect some with Sleepiness or Giddiness, almost as if they were drunk, when they are first taken.

When used as an Alterative, they dilute, attenuate, sweeten, strengthen, and heal; they correct the Acrimony of the first Passages, and are good in many Disorders of those Parts: they supply a Want of Spirits, and are good in Diseases where the Secretions are diminished; whereas the *Bristol Waters* are of most Use, where the Secretions are increased; in all cachectic and scorbutic Habits of Body, and in Obstructions of the Liver, Spleen, Pancreas, and Mesentery, as observed above.

As these Waters are hot, they are thereby rendered more agreeable to the Stomach, especially of those which have been hurt by spirituous Liquors. They have a more powerful balsamic healing Virtue than cold Mineral Waters, and they may be drank in all Seasons of the Year. They are sometimes very slow in producing their good Effects, insomuch that some have received

little Benefit till a good while after they have returned Home.

The *Bath Waters* have been found to be good in Want of Appetite and Digestion, in Pains of the Stomach; in hypochondriacal Flatulencies, the Heart-burn, frequent Vomitings from Weakness, and in Pains of the Cholic, as well when drank as bathed in; and they have done great Service in Cholics arising from a clammy Bile, with an Obstruction of the Gall Bladder, and with Stones generated therein. There are instances in their having cured scirrhus Indurations of the Liver, and particularly those hard Tumours left after the Ague, called Ague-Cakes; and in these Cases, bathing and drinking ought to be used alternately. Dr. *Baynard* affirms, that the *Bath Waters* properly used, are the best Remedy in the World for the Jaundice, and have also proved successful in the Beginning of Dropsies. They are very profitable in hypochondriac Disorders, Melancholy and Dejection of Spirits, by drinking only; for bathing in some of these Cases is not to be used without a great deal of Caution. They have been found of great Use in Disorders of the urinary Passages, particularly Sharpness of Urine, the Stranguary, Gravel, and Ulcers of the Bladder; in which last Case it must be both drank and bathed in. But the most celebrated Effects, which have been taken Notice of for a long while, is the strengthening the nervous Parts, both by external and internal Use, but chiefly by the first.

It has been already observed, that they cure Contractions as well as Relaxations; but the Cross Bath is most remarkable for the first, as the hotter Baths are for the last; and *Guidot* gives a
signal

signal Instance of their Efficacy of curing a Prolapsus Uteri of eighteen Years standing. *Pierce* takes Notice of the dead Pally being cured chiefly by bathing and pumping the Part, and sometimes drinking the Water. Thus likewise Lamenesses have been cured, attended with falling away of the Flesh, Coldness and Stupor of the Part. A Palsy of the Tongue has been cured by receiving the *Bath Water* from a Cock, at the Root of the Tongue, and another by bathing and gargling. Likewise a paralytic Difficulty of swallowing was cured by drinking, and afterwards by pumping the Neck and Throat. Children have been cured of Weaknesses, the Rickets, crooked Limbs, Lameness, Numbness, and Contractions, and chiefly by bathing.

Dr. *Mead* had affirmed, in his *Monita Medica*, that hot bathing was hurtful to paralytic Patients; but Dr. *Summers*, a late Physician at *Bath*, published an Answer thereto, and appeals to the Register of the general Infirmary at *Bath*, where he finds the Account of these Patients to be as follows. In nine Years there were admitted 310; of whom 57 were cured, 151 were much better, 45 were no better, and 42 were incurable: Twelve of these died, and three still continued in the House. All these bathed twice a Week and many thrice. Of those that were cured or discharged as much better, 30 were forty Years old, 15 were turned of fifty, and 5 were sixty and upwards. Besides it must be considered, that most of them were turned out of other Hospitals as incurable. *Guidot* observes, that of 31 paralytic Patients, 25 were cured by bathing only; and the Forests of Crutches left there are an ample Testimony of the Efficacy of bathing in

paralytic Cases. Palsies are now more frequent than formerly, which is owing to the Employments of several Tradesmen, such as Silverers of Glass, Colour-grinders, Plumbers, Pewterers, and Chemists; to which may be added, a great Number from the *West Indies*, who become so in Consequence of the dry Belly-ach. There are also Palsies from the Scurvy, which have been cured by Bathing only, though the internal Use may be joined in many of these Cases. Likewise Lameness from Loss or Contraction of the Limbs, from Poisons, arsenical and mercurial Applications, from Wounds, Ulcers, and Falls, have been cured by drinking, bathing, and pumping.

These Waters are beneficial in cold Rheumatisms, in some Circumstances of the Gout, in old and wandering Pains, attended with low feverish Heat; and in fixed Pains, particularly in the Hip-gout and Lumbago, which have given Way to Drinking, Bathing, and Pumping. The hottest Bath is fittest for all cold or old Aches, because it disposes the Patient to plentiful Sweating. The Head itself may be bathed, with Caution, in violent Head-achs, from a Rigidity of the Membranes, or a Stricture of the Vessels; but if this fails, they may be removed by pumping, which likewise cures Deafness from cold Causes.

Dr. *Oliver* the younger has given us an accurate Account, in what Circumstances these Waters may be useful in the Gout. He affirms, that they are advantageous where the Matter is more clammy, but less acrid, than in the true inflammatory Kind; that is, when it lodges in the Tendons, thickening, hardening, and contracting them, and rendering them unfit for muscular Motion;

Motion; but not sharp enough to produce Chalk Stones. In this Case, bathing, rubbing, and pumping are very beneficial, and it seems to have been under these Circumstances, that those Persons have been relieved, who have left their Crutches as grateful Memorials.

In the irregular, flying, nervous Gout, the Cross Bath may be used fifteen Minutes, twice a Week. In those who have long laboured under the Gout, that has made Havock of their Constitutions, depraved their Appetite, weakened their Digestion, and deposited a chalky Matter on their Joints; after proper Evacuations, and particularly a Vomit has been premised, the *Bath Water* should be drank ten Days before Bathing; and when the Patient bathes, the Bath should not be too hot, nor the Stay too long therein. Besides, its Use should be foreborn, as Occasion requires, lest it brings on a dangerous Fever, or too suddenly dissolve the Gouty Matter, in Consequence of which it may be deposited on some of the noble Viscera. He that expects to find much Relief in Gouty Lamenesses, must submit to a long and tedious Course of bathing, repeated at proper Intervals, and for many Seasons successively. When the Gout becomes irregular, and the Health is not so good as when it was periodical, the *Bath Waters* are of great Service, that is, after moderate Evacuations, and a short Course of drinking the Waters, assisted with proper attenuating Medicines, and bathing in the Cross Bath twice a Week.

Some Physicians would have these Waters drank for a considerable Time in small Quantities, with proper Intermissions, when the Gout attacks the Head, Breast, Stomach, or Bowels. These Waters are of signal Service in many female Dis-

orders; in all Diseases of the Matrix, ascribed to a cold and moist Cause; in the Pica, or Longing of Maids to eat Chalk, Coals, and the Like, and in all Obstructions; but in these last Cases, aperient Medicines should be joined to bathing and Drinking. These Waters are also of Use in scorbutic Diseases, especially when they are not attended with Heat; for they correct the Acrimony of the Blood, and have proved effectual in curing wandering Pains, and divers Eruptions of the Skin; inward Erosions, Excoriations, and Ulcers, particularly by drinking them; but running Ulcers of the Head, and other Parts, those of a scald Head and fistulous, are cured chiefly by bathing, as are also leprous, scabby, and scurfy Diseases, and Eruptions of the Skin, that appear like the stinging of Nettles. But they are most efficacious in the Leprosy attended with white and dry Scabs. Some recommend them in nervous as well as moist Asthmas; however, no Baths should be used, except the most temperate, in Coughs and hectic Fevers.

After all, it must be acknowledged, that the *Bath Waters* are not without their bad Effects, especially the hottest; for these are prejudicial to Diseases proceeding from a preternatural Thinness, or an inordinate Motion of the Humours, in Convulsions, in the Gout and Rheumatism in an inflamed State, in Inflammations of the Kidneys, and in the Stone. Likewise they are hurtful to those, whose Brain, Lungs, Liver, or Kidneys are preternaturally hot, as Dr. Mead observes. A long continued Use of these Waters is detrimental to the Stomach, by relaxing its Fibres, and more especially in those Diseases that are owing to some Fault in the nervous Fluid. They are also pre-
judicial

judicial in Bleedings of all Kinds, in the Bloody Flux, and in the Scurvy attended with Heat; as also, in a Penury and Languor of the Spirits, without an Ulcer or Spitting of Blood. Those that are of a dry Constitution, or are emaciated, or have hectic Heats, or are subject to Spitting of Blood, or *St. Anthony's* Fire, or an Inflammation in any Part of the Body, or to a Difficulty of breathing with Heat, should avoid bathing. The usual Season at *Bath* for bathing and drinking the Waters, is in *April*, *May*, *June*, the latter Part of *August*, and all *September* and *October*. The proper Method of using these Waters should be determined by a Physician who lives upon the Spot.

The Mud of this Water is not entirely useless; for some make a Poultice of it, and sometimes they mix the Mud and Scum together, to which they add proper Herbs, boiled in *Bath Water* to the Consistency of a Poultice. It is affirmed the Mud will soften hard Swellings, help Contractions of the Limbs, and dissolve a fizy Matter lying in any Part or Joint; it will also disperse Wind that distends it, and strengthen the Joints and nervous Parts. It has also been found beneficial in scald Heads and running Ulcers of the Head, being applied as a Poultice till it grows dry; after which it must be washed off with warm Water.

Pumping any Part is now highly in Request, because it is found more beneficial, in some Cases, than going into the Bath. Some receive from an hundred to two hundred, and sometimes a thousand Strokes and upwards; but then when it is going to be left off, it must be done gradually, that is, there must be a greater Distance between the Strokes, and the Distance must be increased by

by little and little. The most convenient Time is in the Morning, or Evening, or near the Time of going to Bed, when the Stomach is not full. It is chiefly used in cold, fixed, inveterate Disorders of the Head, Nerves, and Joints, particularly Contractions of the Tendons; but it does not at all agree with hot Tumors. Old Pains of the Arm, Hip, and Back, that could not be cured by common Remedies, have been removed by Pumping; but then the Part has received sometimes three thousand Strokes at a Time. An obstinate Hipgout was cured, first by pumping and then cupping, the Part, after it was well warmed by that Method.

The usual Time of the Continuance of Bathing and Drinking is generally five or six Weeks, and in an obstinate Case they must be repeated every Year till some Relief is found. The common Quantity which is drank, is from a Pint to a Quart and half a Pint in a Day; but however some Physicians allow a great deal more in particular Disorders, insomuch that some are allowed a Gallon every Day; but then they must begin with a Pint at a Time, and increase half a Pint every Day till they arrive at the utmost Dose, which must be lessened again in like Manner. The *Bath Waters* always pass best sitting still and lying in Bed; but the Patient must not sleep till the Waters are pretty well gone off. If they pass off too much by Stool, they should be drank in small Quantities, or in Bed. It is universally allowed, that the Waters are best drank at the Fountain Head, and yet in some Cases they may be drank when cool; that is, when Persons are young and full of Blood, or when there is a Spitting of Blood; but in this Case they are seldom prescribed, tho' they

they have been drank with Success; and *Oliver* observes, that in most Disorders of the Lungs, they are better drank cold than hot. To what has been said may be added, that proper Ingredients may be mixed with the *Bath Waters* in various Diseases; but this should be left to the Judgment of the Physicians at *Bath*, because, from long Experience, they will be best able to tell what is proper, and what not.

BUXTON WELLS in Derbyshire.

BUXTON has been famous for having a hot and a cold Spring near each other; for a Person might put his Finger into the hot and this Thumb into the cold at the same Time; but however this may have been true formerly, those that have been lately there affirm they can see nothing of it.

Buxton Well lies at the Bottom of a dirty Village of the same Name, and is near an Inn, which is dignified by the Name of the Hall. It is a large commodious House, and a great deal of good Company resort thither in the Summer Time, and stay there for the Benefit of Bathing. The Air is good, and there are several Diversions that Gentlemen may employ themselves in; for there is Plenty of Grouse or Moor Game for those that love Shooting, and of Trout and Grayling for those that are fond of Fishing; besides others of different Kinds for the Ladies. They are accommodated with a good Assembly-Room, in which the Company dine and sup together, and after Supper they generally have a Ball. The Well is about a Stone's Cast from the House, and is covered with a handsome Building, it being a Section of a Rotunda; the Inside is paved with Brick, and the Spring itself is surrounded with Stone.

Stone. The Walks are adjoining to the Well, and are contained in a Field, which is bounded on one Side with a pretty River, and on the other by a Lane. The Walks are not of Grass or Gravel, but of pure natural Earth, strewed over with fine Ashes, to prevent the Soil from sticking to the Shoes. In the Middle of the Field there is a Mount cast up, and planted with Trees and Shrubs, which has a very fine Effect.

The Water possesses an intermediate Degree of Heat, between those of *Bath* and *Bristol*; and is the principal calcarious Water described by Dr. *Short*. The Heat is thus determined by that Author; for he tells, that if five Eighths of a Quart of boiling Water be added to three Pints of River Water in Summer, it gives the exact Heat of *Buxton* Bath in that Season.

This Water has a sweet and pleasant Taste, and when cooled, weighs eight or ten Grains in a Pint less than River Water. It deposits a white Sediment when Oil of Tartar or Spirit of Hartshorn is added thereto; as also with the Solution of Sugar of Lead. It likewise exhibits a white Sediment with the Solution of Silver, and on Standing a white Purple. It will not tinge Silver when immersed therein, nor does it shew any evident Signs of Sulphur; however, it will brighten the Solution of Gold. Spirit of Vitriol and Oil of Sulphur will cause an Ebullition, and Galls, being soaked for four Days therein, will become green. Likewise Syrup of Violets will turn this Water to a greenish Colour.

A Gallon of *Buxton* Water will yield about twenty Grains of a Sediment, which consists chiefly of Lime Stone, Sea Salt, and a little calcarious Nitre, and it is a temperate Bath, and a
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very light Water. Some have thought it partakes somewhat of Sulphur; but if it does, it is extremely volatile.

It is not near so hot as *Bath* Water, and contains a much less Quantity of the impregnating Minerals; for that, as observed above, has at least one hundred and thirty Grains of Sediment. *Bath* likewise has, among others, a ferruginous Principle, but *Buxton* is entirely without; besides which the Quantity of Sea Salt is very inconsiderable, the predominating Principle being rather an absorbent Earth.

The Nature of *Buxton* Waters approaches much nearer to that of *Bristol* than *Bath*, and it may be safely used both inwardly and outwardly, in those Cases where the *Bath* Waters are hurtful. It has relaxing, diluting, sweetening, and attenuating Qualities, and opens Obstructions of the smallest Vessels. It cools the Parts that are too hot, gently warms those that are cold, and dries up those that are moist. It is not followed with Sweating, but rather a Coldness, and it is good in Consumptions, for hot scorbutic Humours, and all Fluxions and Bleedings, as well as in hypochondriacal and hysterical Cases. It is also of great Use, both externally and internally in the regular Gout, in rheumatic and scorbutic Pains, in scorbutic Rheumatisms, in Vomitings of Blood, and in inordinate Fluxes of the Piles, as well as in other Bleedings. It is proper in an Inflammation of the Liver, in too great a Heat and Obstruction of the Kidneys, and in Consumptions of the Lungs; in all which Cases these Waters have been found successful, even by external Use. Internally Experience has shewn that it is good in the Diabetes, in bloody Urine from a Weakness
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in the urinary Passages, in the bilious Cholic, in want of Appetite, in cold Stomachs from hard Drinking, especially of spirituous Liquors; and in an Atrophy from a Sharpness of Blood, occasioned by free drinking at improper times of the Day. To these may be added Contractions and Stiffness of the Vessels, especially in old Age, Cramps, Convulsions, the dry Asthma, without a Fever or quick Pulse, Barrenness from various Causes, and also in a Gonorrhœa. It also cures *St. Anthony's Fire*, Ring Worms, Scabs, the Itch, Morpew, Nodes, chalky Swellings, and all hard callous Tumours, and old Strains, and withering of the Parts; in all which last Cases bathing is chiefly to be used.

Of MATLOCK BATH in Derbyshire.

MATLOCK is a Village near *Wirksworth* in *Derbyshire*, and is seated ten Miles from *Derby*, seventeen from *Nottingham*, and sixteen from *Sheffield*. It stands on the very Edge on the River *Derwent*, and is a very beautiful Place and finely situated, especially for those that are fond of Solitude, or would divide their Time between that and an agreeable Society. The Bath consists of one uniform Range of Building, except an Outhouse of handsome Lodging Rooms nearly adjoining, and the Stables which are out of Sight of the House. In the first Part of the Buildings there are two Baths, one for Gentlemen and the other for Ladies; and the Entrance and Dressing Rooms are quite distinct.

The Ladies Bath is arched with Stone about ten Feet within the Surface of the Water, which renders

renders it very cool and very private. Over the Baths are the Lodging Rooms for the Convenience of those who bathe the oftenest. Beyond the Bath, on the Ground Floor, is a Range of Rooms, each capable of entertaining a Dozen People; and at the farther End is a large Kitchen and a Servants Hall. In the Middle of the Building is a grand Staircase, fronting the Top of which is the Music Room; and on the right Hand is the Assembly Room, which is large and commodious; and there is a Passage out on the Side of a Hill, which rises to a great Height, and shelters the back Part of the House.

The Company that comes to this Place are, for the Time being, in some Sense, one Family; for they breakfast, dine and sup together in the same Room. On the left Hand of the Music Room are Bed Chambers, and there are others on the Floor above that.

Before the Front of the House there runs a spacious Terras, from whence a few Steps lead down to a level Grass Plat, which is very convenient for the Company that walk or play at Bowls. At the Edge of the Green there is a dwarf Wall, beyond which there is a rocky Descent to the River *Derwent*, which is here very wide and rapid, and runs with a murmuring Noise, which is greatly increased by the Repercussion of the Sound of the high Rocks that hang over it. The highest of them is called *Matlock-Fort*; is 123 Yard high, or as some say, which is much the same, it is ten Yards higher than the Top of *St. Paul's Steeple*. On one Side of the House is a Grove of lofty Trees, and on the other a delightful shady Lawn, called *The Lover's Walk*. In short, the whole Place is surrounded with agreeable

agreeable Landscapes, fine Woods, pleasant Walks, high Rocks, steep Hills, and romantic Views, which altogether render it a Sort of a Paradise.

About a Mile from hence there is a pretty House, built upon the Foot of a Rock, which is called *The Boat House*. The Garden is surrounded with a Vein of grey Marble, nearly a Mile thick. In the House there is a neat Assembly-Room, where the Company from the Bath frequently come to drink, and have a Concert of Music; there being a handsome Orchestra furnished with an Harpsichord and divers other Instruments. Sometimes the Company go in a Pleasure-Boat on the River, with several *French Horns*, which must make a very sweet Harmony among the Rocks.

This Bath is still rendered more pleasant by the Politeness of the Company, and from the Easiness of the Charges; for here they pay nothing for Lodging nor Bathing, and the usual Expences is Three Shillings a Day for Meals, and Tea in the Afternoon. There is no Master or Mistress, because the Structures were erected by the Subscriptions of divers Gentlemen round the Country, who employ Servants to take Care of it and the Guests, to their no small Advantage.

The Water of this Bath is not so hot as that of *Bristol*; but it is very clear and emits no Steam, except in a cold Morning, or in the Winter Season. It is a Penny-weight in a Pint lighter than common Water; and in the Neighbourhood there are found great Heaps of Petrifications of the calcarious Kind. It curdles with Soap, and discovers the same Appearances with Oil of Tartar and Spirits of Harshorn as *Buxton Water*, as well

as

as with the Solution of Silver. Spirit of Vitriol and Sulphur will occasion a strong bubbling Commotion, after which the Water becomes exceeding clear, and the Sides of the Glass are covered with Air Bubbles. With Galls it gives a slight purple Tincture. A Gallon of Water yield forty Grains of Sediment, whereof thirteen are Salt, consisting of Nitre and Sea Salt, and the Remainder is a white, rough, alkaline Earth. It may properly be called a calcarious Water, and it pretty nearly agrees with that of *Bristol*, with regard to the Quantity of Earth it contains; it is greater than that of *Buxton*, and is more powerful in sweetening the Blood and Humours; but it has less Heat and consequently less Activity. Some think there is a little Iron contained in the terrestrial Matter, as appears from the Mixture with Galls.

The Virtues of this Water are found to be nearly like those of *Buxton* and *Bristol*, both for external and internal Use. Both drinking and bathing are good for Gleet, the Fluor Albus, the Cancer, and the King's Evil; bathing is proper for Rheumatisms, the Scurvy, the Itch and Scabs, and hectic Ulcers are relieved by the outward and inward Use. Internally it is good in an Atrophy, from an hectic Fever, where the Blood is thin and sharp, the Motion quick, and the Vessels weak. It is also successfully used in spitting of Blood, bloody Urine, bloody Stools, frequent Bleedings at the Nose; as also in hectic Fevers and inward Ulcers, with a Milk Diet; it likewise cures the Diabetes, and the bilious Cholic.

Of SCARBOROUGH WATER in Yorkshire.

Scarborough is seated in the North Riding of *Yorkshire*, on the Sea Shore, and on a steep Rock, which has craggy Cliffs, that it is almost inaccessible on every Side, it being washed by the Sea all round except on the West. On the Top of the Rock there is a handsome large green Plain, containing above sixty Acres of Ground; and there is a little Well of fresh Water springing out of the Rock. It was here that *Henry II.* erected a noble large Castle, now in Ruins. The Harbour is said to be one of the best in the Kingdom; and there are several Vessels chiefly employed in the Coal Trade. There is a Pier which is maintained at the public Charge; that is, by a Duty upon Coals from *Newcastle* and *Sunderland*. They have a great Variety of Fish; such as Hakes, Haddocks, Ling, Whittings, Mackrel, Cod Fish, Turbots, and several others. This Town is enriched by the great Numbers of People of all Ranks that flock hither, in the hottest Months of the Year to drink the Waters. The *Spaw Well*, improperly so called, is a Spring about a Quarter of a Mile South of the Town, in the Lands, and at the Foot of an exceeding high Cliff. It was discovered about 160 Years ago, and it is never dry; but, on the contrary, will yield twenty-four Gallons of Water in an Hour. The Top of the Cliff was fifty-four Yards above high Water Mark, until *December 29, 1737*, when it was rent 224 Yards in Length from the main Land, and sunk with the Cattle feeding on it near seventeen Yards perpendicular

pendicular. During this the Place under the Cliff, where the People used to walk, rose six or seven Yards above its former Level, for above One hundred Yards in Length on each Side of the Wharf adjoining to the House; and the Wells rising with it the Water failed, and the Spring was lost for some Time. But on clearing away the Ruins for the Rebuilding the Wharf, it was recovered to the great Joy of the Town's People. Here are Assemblies and Balls much in the same manner as at *Bath* and *Tunbridge*.

This Water has been much used of late Years, not only at the Fountain Head, but has been transported to many distant Places. The Taste is bitterish and ferruginous, and it grows fetid in Bottles that have not been thoroughly cleansed from all fermented Liquors; but after this it grows sweet again. It curdles with Soap, and yields a large white grumous Sediment with Oil of Tartar; turns wheyish, and exhibits a white Incrustation on the Sides of the Glass with Spirit of Sal Ammoniac. With Sugar of Lead it turns milky, and yields a Sediment; but with a Solution of Silver, a gross white Cloud and Precipitation; but with Lime Water it suffers no Change. It discovers many minute Bubbles with Oil of Vitriol, still more with Spirit of Salt, which shows that this Water is an Absorbent; and Dr. *Shaw* observes, that an Ounce of the Water will destroy the Acidity of a Drop of Oil of Vitriol. If it be boiled with an equal Quantity of Milk it will become curdled; and it will turn green with Syrup of Violets; as also to a deep Red with Logwood; a pale Red with Brazil; a deep Orange with Rhubarb; and there will be a deep Blue Circle on the Surface with Ash Bark. Galls give it a

Purple Tincture at the Fountain-head; but it turns Green in twenty-four Hours. The specific Gravity is considerably greater than that of distilled Water.

When this Water is distilled in the common Manner, there is no Difference between it and common distilled Water; for it will not change Colour with Syrup of Violets, nor let fall any Sediment with Oil of Tartar; but it becomes a little milky with the Solution of Silver. During the Time of its Evaporation, it throws up a Scum like Lime Water, which will ferment with Spirit of Salt, and shews that it is of an absorbent Nature. A Gallon will yield about two hundred and eighty four Grains of Sediment of a reddish white Colour, and of a bitter, saltish, and roughish Taste. It destroys the Sourness of Acids, and makes a strong Ebullition therewith; it also turns of a light Green with Syrup of Violets. The Proportion of Earth to the saline Parts is as 66 to 150; from whence appears the Reason of its fermenting with and sweetening Acids. The Salt, separated from the Earth is greyish, with a brackish Taste, is very bitter in the Throat, and when fresh has a strong sulphureous Smell. Its Solution in distilled Water will curdle with Soap and Oil of Tartar, and turn of a pale Amber with Galls and Sumach; it will ferment with Oil of Vitriol, but not with Spirit of Salt or Vinegar; and half a Dram boiled with a Pint of Milk will curdle it.

When this Salt is mixed with Blood flowing from the Veins, it will render it less florid, and will form a tough Size on the grumous Part; it will also produce some Degree of Coagulation in the Serum; and rubbed with Syrup of Violets it will

will turn Green. The Cryftals from this Salt will diffolve in about twice the Weight of Water ; but before it is cryftallized, it will not entirely diffolve in ninety-fix Times its Weight, after a Week's Infufion, which is an Argument of its calcarious Nature. Being taken as a Purge diffolved in fix Ounces of common Water, to the Quantity of two Drams, it operates very eafily in an Hour's Time, not finking but raifing the Spirits.

That Part of the Sediment, feperated from the faline, that will not diffolve, will excite a great Ebullition with Spirit of Salt, and even with Vinegar ; it will alfo blunt the Acidity of equal Parts of Oil of Vitriol. It will turn Green with Syrup of Violets, and after it has been calcined three Hours, it will turn Red with a Solution of corrosive Mercury fublimated in Water. It appears to the naked Eye like Powder of Talc, and viewed through a Microfcope, a great Part of it appears in the Form of large irregular Cryftals, and Part of it gritty ; hence it is known to be a mixed calcarious Earth, with fomewhat of Bole, which, by Infufion, affords a fmall Propoition of Iron.

This Water has been found very good in heclic Fevers, the Rhematifm, Scurvy, preternatural Thirft, recent and partial Inflammations, Difeaſes of the Skin, and kills all Sorts of Worms ; it is alfo good in Diforders of the Stomach from Intemperance, as well as in hypochondriac and hysteric Diforders, in Stuffings of the Lungs and Aftmmas, in an habitual Coftivenefs, the Heartburn, and in all Cafes where Purging is indicated.

It is likewise eſteemed for curbing all preternatural Evacuations, as Gleet, the Fluor Albus, and bloody Urine, to which may be added the Green-Sicknefs.

Of TUNBRIDGE WELLS in Kent.

TUNBRIDGE Wells are situated in *Kent*; about five Miles South of the Town of *Tunbridge*, and are much resorted to in *June*, *July*, and *August*. It chiefly lies at the Bottom of three Hills, on which are good Houses and fine Fruit-Gardens. They are thirty-four Miles distant South-east from *London*, and those that frequent them have the Benefit of a good Market; there are also Shops of different Sorts, as for Book, Toys, Milinary Ware, a Sort of a Manufacture of wooden Bowls, Cups, and the like, commonly called *Tunbridge Ware*; besides Coffee Rooms, and two Ball Rooms. Behind the Wells there is a large Chapel of Ease, where Service is performed twice a Day, and where seventeen poor Children are taught, who are wholly maintained by the Contributions of the Company that frequent the Wells. The Air here is excellent, and all Provisions are very reasonable; they have Plenty of wild Fowl, and good Fish almost of all Kinds, about three Hours after they are taken.

With regard to the Qualities of the Waters, Dr. *Whistler* informs us that in a dry Season he could perfectly distinguish a Gas of Vitriol; and Dr. *Madan* tells us, it is sensibly impregnated with volatile and spirituous Exhalations; for if you put a Bottle of this Water about Sun rising to your Eyes, you will perceive it affects them with an evident Irritation. It turns of a blackish purple Colour at the Fountain-head, with Galls, Oak Leaves, and an Infusion of Green Tea; but if you add some Drops of Spirit of Vitriol thereto, the Clearness will be restored. Dr.

Hales

Hales informs us, that it will give a stronger Colour with Galls in wet Weather than dry, which occasioned him to suppose, that these Waters then pass through some ferruginous Strata, which they cannot reach when the Weather is dry. He also teaches us how to preserve the Virtue of this and other Chalybeate Waters for a long Time, so as to be fit to drink in remote Places. His Method is to mix five Drops of Oil of Sulphur with a Quart of this Water, which will prevent its letting fall any Sediment, and preserves its Property of tinging with Galls from *August* to *January*.

With Regard to its specific Gravity, about seven Ounces and a Quarter weigh ten Grains less than Rain Water, and about four Grains than the *German Spa*. In a very rainy Season, in *January*, a Gallon of it will yield nine Grains of a Sediment; but in *August* it will afford no more than six Grains, which will grow soft after standing a few Days. It is a light and comparatively pure Chalybeate, and its Virtues are most powerful at the Fountain-head.

Dr. Madan observes, that this Water will have such an Effect, as to send forth blackish Steams from the Center to the Circumference, and that it will make the Linen of the Drinkers of that Colour, which obliges them to change it often. Others inform us, that it purges most by Stool and Urine; but if the Stomach is foul, by Vomit. Some, instead of Physic, take a Spoonful of common Salt in the first Glass with a good Effect.

Allen informs us, that it is an effectual Remedy in Obstructions of the Glands of the Mesentery, wherein, besides the chylous Excrements and Rejection of Food, an Hour or two after eating, the

Patient has no Complaint of Want of Appetite, nor any discernible Fever, nor any other Disorder, till the Disease is continued so long, as to induce a Cough, a Fever, a Want of Rest, and Loss of Flesh. In this Case *Tunbridge Water* has never deceived those that have tried it. It is also an effectual Remedy in recent Dropsies, in those whose Constitutions have been broken by Misfortunes; also in phlegmatic Patients, whose Blood is very poor. It is also of great Service in Disorders of the Stomach, and particular in violent Pains thereof, especially those that are convulsive, in the Hypochondriacal, and in Collections of Wind or Phlegm from Obstructions. A painful Swelling at the Pit of the Stomach, of many Months standing, was relieved by these Waters; as also was a Fistula, that had continued for many Years, only by drinking the Water for six Weeks; it has also cured several Ulcerations of the Kidneys. Add to these, that a Gentlewoman, who had always a periodical Fever and Cough in October, was freed from them by drinking these Waters.

Rouze confirms their Efficacy in Ulcers of the Kidneys and Bladder; as also when the Bladder is stuffed with phlegmatic Matter resembling the Stone, and in bloody Urine. It cures the Cholic from a tartareous Phlegm, and Vomiting, and Hiccough, as well as Worms. In the simple and venereal Gonorrhœa it has a remarkable drying Faculty; and it likewise strengthens the Brain and Origin of the Nerves; it is also good in Convulsions, the Head-ach, and Vertigo. Besides this he affirms, this Water is excellent in long and tedious Agues, in the Dropsy, black and yellow Jaundice, hard Swellings of the Spleen, or the Ague-

Ague-Cake, the Scurvy, Green-Sickness, Fluor Albus, and other Female Disorders; for it opens Obstructions, cools the Blood, blunts the sharp Particles therein, strengthens the retentive Faculty, and helps sore Eyes and red Pimples. Dr. *Stare* acquaints us, that when this Water is drank judiciously, it cures obstinate and inveterate Loosnesses.

Of EPSOM WATERS in Surry.

EPSOM is a Town that lies fifteen or sixteen Miles South-west from *London*, and has been long famous for its Mineral Waters; it is a delightful Place, and lies open to *Banstead Downs*, near which are many handsome Seats of the Gentlemen and Citizens of *London*. On the neighbouring Downs there are Horse-races every Year; but the Wells and Bowling-Greens are not quite so much frequented as formerly.

Epsom Water is pretty clear, and without Smell; but if it be kept in covered Vessels for some Weeks in Summer, it will stink, and acquire a nauseous bitter Taste, with somewhat of a maukish Saltness. It will curdle with Soap, and with Salt of Tartar, and with Spirit of Sal Ammoniac let fall a grumous Sediment; with a Solution of Silver the Sediment will be blueish, with that of Sugar of Lead small and white, with a Solution of Allum white and grumous; but if mixed with Lime Water it will continue clear.

With Oil of Vitriol and Spirit of Salt, a small Fermentation will be excited; and boiled with an equal Quantity of Milk it will curdle, but the
Whey

Whey will be clear. When Galls and Sumach are infused therein, it will become wheyish on the Surface, and afterwards green, descending lower down in the Glafs. With Syrup of Violets it will turn to a light green on the Surface ; with *Brazil* Wood, of a scarlet Colour ; with Logwood, of a crimson ; and with Rhubarb, of an orange Colour ; with Ash Bark it had a pale blue Circle at the Surface, and was of a flight yellow underneath.

While it is evaporating, it will throw up a Sort of a Cream, which will ferment with Acids, and which Dr. *Grew* took to be a Sort of a Plaster, and not Lime Stone, as others have thought ; because being burnt in a Crucible with Lime-stone, it neither became caustic on the Tongue, nor grew hot when Water was poured thereon. A Gallon of Water will yield an Ounce, and sometimes an Ounce and a Half of this Cream and Sediment, for the Quantity varies according to the Season. The whole is of a greyish Colour, almost impalpable, of a brackish and nauseously bitter Taste, and an odd strong Flavour. If Oil of Vitriol be poured thereon, it ferments and emits acid Vapours ; it will also ferment with Spirit of Salt and Vinegar, though in a much weaker and transitory Manner. Rubbed with Syrup of Violets it becomes of a light green Colour, and with Salt of Tartar it has a pungent and urinous Smell. When thrown on a red hot iron, it will sometimes sparkle and fly a little, and sometime lie quite still.

Allen affirms there are eight Parts of Salt to one of Earth ; but *Rutty* tells us he could not find that the Earth was in so great a Proportion. The Salt separated from the Earth, by boiling the Sediment

ment in distilled Water, and afterwards filtering and evaporated to Dryness, is of a whitish yellow Colour, and of a singular strong Smell, with a nauseous bitter Taste. The Solution of the Salt in distilled Water, with Oil of Tartar and Solution of Silver, caused a Precipitation in the same Manner as the Water. It did not ferment with Spirit of Salt nor with Vinegar; hence it is plain, that the Fermentation was owing to the Earth. However it will ferment with the Oil of Vitriol, and the Mixture will emit an acid Fume. A Pound of this Salt put into a coated Glass Retort, and distilled in a reverberatory Furnace, will afford in the Receiver, according to Dr. Grew, a little more than half a Pint of an acid Spirit, in Scent and Taste somewhat like Spirit of common Salt.

Half a Dram of this Salt, boiled with half a Pint of Milk, will yield a stiff Curd and clear Whey. Being rubbed with Syrup of Violets, it will become green after some Time. It will become moist in a damp Air; and thrown on a red hot Iron, it will melt and blister like Alum.

All Authors agree, that the Crystals of this Salt will require but a small Proportion of Water to dissolve them; for an equal Weight has been found to be sufficient; but the Salt, before it is crystallized, will require at least twenty-four Times its own Weight of distilled Water to dissolve it, though infused warm many Days.

The Crystals of this Salt are so many rectangular Prisms, with four parallelogram Planes. They stand upon a crusty Base of the same Salt, and their upper Ends vary much; for there are sometimes three, but must commonly four, inclined or sloping Planes, making obtuse Angles with the
said

ſaid Parallelograms ; hence it appears, that theſe Crystals are like thoſe of calcarious Nitre.

This Salt has a purging Quality, for half an Ounce of it being taken, diſſolved in Spring Water, will work like other Phyſic. Some take from an Ounce to ten Drams in two, three, or four Pints of Spring Water, with a Dram of Mace, for the ſame Purpoſe, and work it off with Poſſet-Drink. It may alſo be taken very conveniently in *Tunbridge* Water, or any other Chalybeate.

The earthy Matter being dried is of a brown Colour, with a Mixture of whitish Parts ; it will not ferment with Vinegar, and no longer than a Minute with Oil of Vitriol ; but it will ſtrongly ferment with Spirit of Salt, which is a Sign that it is but a weak Abſorbent. However, being calcined, it will turn yellow, with a Solution of corroſive Sublimate, from whence its calcarious Nature plainly appears.

The Water itſelf is a diluent and a mild Abſorbent, and is diuretic and cathartic. Before this Water was preſcribed by Phyſicians, it was uſed by poor People for waſhing old Sores, with good Effect ; and this Property belongs to nitrous Waters in general. The uſual Quantity taken is two thirds of a Pint in Summer, and half a Pint in Winter.

Many Years ago the Salt of this Water was mightily cried up for its extraordinary Virtues, which was the Occaſion of its being counterfeited ; and though, upon the firſt Diſcovery of this Practice, it was looked upon as a Cheat, yet it is by no Means ſo bad as in many other Caſes. It is in Reality a very uſeful Salt, and is ordered to be kept in the Shops by the Name of the cathartic bitter Salt. It has this Property with the
true,

true, that it will dissolve in an equal Quantity of Water; that is, twelve Ounces of it will dissolve in a Medical Pint of River Water. It is made of the Bittern which is left after the Coagulation of common Salt; and when an Ounce of it is dissolved in an Ounce of Water, if you pour highly rectified Spirit of Wine upon it, the Salt will immediately coagulate into a solid firm Mass like Ice. Besides, if you put this Salt, with Powder of Charcoal into a Crucible, it will all fly off with a sulphureous Fume, that will fill all the Room. Hence it appears that this Salt, consisting of such subtile Parts, is a better Purge than all other neutral Salts whatever, because it will insinuate deeper into the Coats of the Intestines than any of the rest. Half an Ounce of it is a gentle Purge, that will neither raise any Comotions in the Blood, nor hurt the Appetite, nor weaken the Body.

Of CHELTENHAM WATER in Gloucestershire.

C*CHELTENHAM*, a Market Town in *Gloucestershire*, lies in the Road from *Gloucester* to *Warwick*, and is between nine and ten Miles from that City; but from *London* it is ninety-five Miles almost directly West. It has a handsome Church, and consists of two or three hundred Houses, and has a good weekly Market on *Thursdays*. Since the Year 1740, it is become famous for its purging Water, insomuch that Dr. *Short* gave it the Preference to all other purging Waters in *England*; but it is not now so much in Request as at first. It was said to be discovered by its being casually evaporated by the Heat of the Sun,
when

when a white Salt was left behind which the Pigeons flocked to eat.

This Water is limpid, a little brackish, and nauseously bitter; and sometimes it acquires a disagreeable Smell when bottled. It will curdle with Soap, and lets fall a white grumous Sediment with a Solution of Salt of Tartar and with the Spirit of Sal Ammoniac. The Solution of Silver turns it milky and purplish, and precipitates a large white grumous Sediment. The Solution of Sugar of Lead induces a white Cloud with a white Sediment; and the Solution of Allum a large white grumous Sediment. In one Experiment it continued clear when mixed with Lime Water; but in another it discovered a Precipitation. It ferments with Acids, particularly with Oil of Vitriol, in which there is a great Number of small Bubbles, which continue to rise for a Quarter of an Hour or longer. A Fermentation will be also caused with Spirit of Salt and Vinegar, though not so great as with the former; however these Experiments are sufficient to show that it blunts Acids. When this Water is boiled with Milk, it will curdle but very little, and sometimes not at all. Beef and Mutton steeped and boiled in it will become of a pale red within, and pretty firm. It turns of a deep green with Syrup of Violets, and Cale becomes very green when boiled therein. With Logwood it becomes of a deep red, and with *Brazil* of a deeper red than with some others of this Kind; Rhubarb likewise turns it of a deep red, and Ash-bark of a deep blue, when viewed with the Back to the Light. Galls turn it wheyish and form a green Circle round the Surface, which in three Days standing extends itself downwards. When taken immediately

immediately from the Fountain it turns purple with Galls; but in standing a few Minutes it loses that Quality.

The specific Gravity of this Water is fifty Grains in a Pint heavier than common Water, and when it has stood a little it becomes seventy Grains heavier. Dr. *Short* affirms, that he has got 687 Grains of Sediment from a Gallon of the Water upon a Medium. A little of the Scum taken off while it is evaporating, and dried, becomes as white as Chalk, and will ferment with Oil of Vitriol: The Remainder in the Pan appears partly in round Blisters, is very white, brackish, and of a nauseous bitter Taste, with an odd disagreeable Flavour. It will ferment with Spirit of Vitriol, and makes a small Ebullition with Oil of Vitriol, with an acid Fume; it makes also a small Ebullition with Vinegar, but none with Spirit of Salt. It contains a little impalpable alkaline Earth mixed with the Salt, which is chiefly calcarious; and the Proportion is 74 Parts of Lime Stone, to 673 of calcarious Nitre. When rubbed with Spirit of Sal Ammoniac no pungent Smell is excited; and yet when rubbed with Syrup of Violets it becomes in a few Minutes of a bright Green; it does not soon grow moist in the Air, nor flame on a red hot Iron or Coals. A little Vinegar thrown on it did next Morning exhibit long nitrous Crystals, and short ones like those of Sea Salt.

When the earthy Substance is separated from the Salt, this last is of a nauseous Bitter, and brackish like Sea Salt; likewise the Crystals obtained by dissolving forty-six Grains of the Salt in an Ounce of distilled Water, and evaporated to less than six Drams, are chiefly like those of

Lister's

Lifter's calcarious Nitre, among which are a few that are cubical. The Taste of the Crystals seems to be cold like Ice, and of a nauseous Bitter; they likewise grow white by standing. This Salt will not ferment with Spirit of Salt nor Vinegar, but with Oil of Vitriol it will ferment a little, and a pungent Fume will be excited. Half a Dram boiled in half a Pint of Milk will curdle it, but the Whey will be clear. It will very slowly turn green with Syrup of Violets, and dissolve in twenty-four times its Weight of Water by the Fire-side. The earthy Matter will ferment strongly with Oil of Vitriol, Spirit of Vitriol and Spirit of Salt, but not with Vinegar. When calcined it is white, and has the Taste of Lime; but it will grow reddish with the Solution of corrosive Sublimate in Water; it will sparkle and flame on a red hot Iron, and turn green with Syrup of Violets, though but slowly.

This is a purging Water, and the Dose is from one Pint to three or four, which will work off in an Hour and a Half or two Hours. It never is attended with Gripes, nor renders the Patient low spirited, nor yet does it either heat or chill the Drinker; the best Way of taking it is to warm it a little. It creates a keen Appetite, is a Provocative, and has been used with Success in the Gravel; it is good for scorbutic Humours, and will cure old Ulcers of that Kind though of twenty Years standing, even though they should happen to be in the Legs. It cures *St. Anthony's* Fire, strumous Inflammations in the Eyes, and the tormenting Pains of the Hips and Muscles of the Loins, which proceed from hot scorbutic Salts.

Of the PURGING WATER of Stoke, or Jessop's Well, in the County of Surry.

THIS Village lies about two Miles South of Cobham, and twenty-two South West of London; the Spring is commonly called *Jessop's Well*, and has been advertised in *London*, in the Year 1750, under the Denomination of *Stoke Mineral Water*. In the Map of this County it is called *Stoke Dalberon*; and some name it *Daborn* or *Dabornon*. It is seated near the River *Mole*, that runs between *Leatherhead* and *Cobham*, and is in the Midway between those Places.

This Water is thought to contain more Salt than any Purging Water in *England*, as appears from the Experiments of *Dr. Hales*, which he lately communicated to the Royal Society. This Water has a nauseous bitter Taste, much like a Solution of the bitter cathartic purging Salt, generally known by the Name of *Epsom Salt*. When put up in Bottles some have a strong disagreeable Smell, and others not; and it is observable that those with the strong Smell did not discolour Silver when immersed therein.

It will curdle with Soap, and a Solution of Salt of Tartar mixed therewith will precipitate a white grumous Sediment; it will do the same with Spirit of Sal Ammoniac, with a Solution of Silver and another of Allum; but then it will continue as clear as Lime Water. It will turn milky with the Solution of Sugar of Lead and let fall a white Sediment. It will ferment with Oil of Vitriol and Spirit of Salt, but with very small Bubbles, whence it appears that it will destroy Acids. Boiled with an equal Part of Milk a Curd will be produced, and the Whey will be clear.

Cale boiled in this Water will not only continue green, but it will become more remarkably tender than with several other Waters; it will soon become of a deep Green with Syrup of Violets; but not so deep as with *Upminster* Water. It will turn crimson with Logwood, scarlet with *Brazil* Wood, and will have a deep blue Circle about it with Ash Bark when viewed in a side Position; but the Water will be of an amber Colour underneath. Galls will render it muddy, and the next Day it will have a deep brown Circle on the Surface, which falls lower after standing two or three Days. Dr. *Hales* observes, that this Water at the spring Head will yields a weak Blush with Gall, but not when put into Bottles the next Day; which argues that there is a small Quantity of Steel, which is soon lost.

A Gallon of this Water will yield an Ounce and an Half with twenty-two Grains more of Sediment; that is, 742 Grains. This is very white, and has a somewhat brackish Taste with a nauseous Bitter. When rubbed with Sal Ammoniac, a faint pungent Smell will be excited; it will soon turn to a deep Green with Syrup of Violets, and will become a little moist by damp Weather. The earthy Matter bears but a small Proportion to the Salt, which is of a nauseous bitter; it excites a small Fume, though it ferments but little with Oil of Vitriol; and soon turns to a bright Green with Syrup of Violets. Half a Pint of Milk boiled with half a Dram of the Salt will curdle, but the Whey will be clear. When the Solution of the Salt has the Water evaporated from it, it will leave large Crystals resembling those of *Lifter's* calcarious Nitre. Dr. *Hales* acquaints us that it shoots into very bitter
irregular

irregular oblong Crystals; some of which retain their Form and Firmness for seventeen Months after they are crystallized; and in a Letter dated *January 1755*, he assures Dr. *Rutty*, that they retain their Firmness and Solidity five Years, which the crystallizing Salts of several other purging Waters would not do; particularly those of *Scarborough* and *Cheltenham*. Half an Ounce of distilled Water will dissolve ten Grains of the Salt when placed by the Fire-side; it will melt in large Blisters on red hot Iron, and will crackle a little. The earthy Matter, which is very small in proportion to the whole, according to Doctor *Hales*, will sparkle on a red hot Iron, as well as smell like Wool; it will ferment a little with Spirit of Vitriol, but scarcely any thing at all with Vinegar; but after Calcination it has the Taste of Lime, and will turn yellow and red with the Solution of corrosive Sublimate. Hence it appears that this Water contains a large Proportion of calcarious Nitre, a little Sea Salt and calcarious Earth, and probably a little Natron.

According to Dr. *Hales*, a less Quantity of Water will suffice for a Dose than any other; for which Reason it sits better on the Stomach and enlivens the Spirits of those that take it. It has been long noted for a good purging Water in the Neighbourhood; a single Quart will purge pretty briskly, and cause plenty of Urine without Gripes. Dr. *Clark* observes that its Salt will stimulate the Rectum very much; and that it has performed Cures in obstinate scorbutic Cases, though at first it will heat so much as to occasion cutaneous Eruptions; but two or three more Doses will carry them off. Dr. *Addee* is of Opinion, that there is a fine volatile Spirit in these Waters, and

that they may be drank for a considerable time as an Alterative with very happy Consequences. Dr. *Hales* has found by Experience that there is an extreme Penetrability in this Water ; because a Man who stood about three Hours bare legged in the Well to clean it, was purged so severely for a Week, that he declared he would not venture on any Account to cleanse the Well again ; likewise the same thing happened to another Man.

Of the WATER of ACTON near London.

ACTON is a large Village, eight Miles West of *London*, and a noted Thoroughfare on the *Oxford Road* ; near it, on *Old Oak Common*, the Wells are situated, which are much frequented in *May*, *June*, and *July*. The Water is purging, though it is very clear and without Smell ; nor when bottled for some time does it deposite any Sediment. It is of a moderately bitter and somewhat of a nauseous Taste, like a weak Solution of artificial *Epsom Salt*. It will curdle with Soap, and Salt of Tartar produces a white grumous Cloud ; the Spirit of Sal Ammoniac does the same, but in a less Degree. With Solution of Silver it produces a thick white Cloud, and soon after a brackish grumous Sediment ; the Solution of Sugar of Lead creates a bluish Cloud and a white Sediment ; that of Allum a gross grumous Sediment. Oil of Vitriol and Spirit of Salt excite a small Fermentation ; Milk boiled with equal Parts of this Water will curdle, and the Whey will be clear. With Syrup of Violets it will turn to a light Green, and with Galls there will be a Greenness near the Surface after standing twenty-four

four Hours. It will not turn Beef red when boiled in it as other Waters merely nitrous will, notwithstanding a strong Solution of the Salt will redden it a little. With Logwood this Water will turn of a deep Red, with *Brazil* Wood of a Scarlet, and with Rhubarb of an Orange Colour; but with Ash Bark it will turn blue at the Surface and amber coloured underneath.

A Gallon of this Water will yield 344 Grains of Sediment, which is very white and of a nauseous bitter Taste; it will ferment a little with Oil of Vitriol and Vinegar; but very briskly with Spirits of Salt. The Proportion of the Salt of the earthy Matter is as seventy-three to four. *Allen* acquaints us, that a Pint and a half of the Water yielded forty-eight Grains of Salt, in which was six Grains and a half of reddish Earth.

The Salt separated from the earthy Parts is grey, and of a bitter Taste; sometimes it will melt in Blisters on red hot Iron, and sometimes not; it will not ferment either with Vitriol nor Spirit of Salt. Half a Dram boiled with half a Pint of Milk will curdle it with clear Whey; it will not entirely dissolve in forty-eight times its own Weight of distilled Water; but it will grow moist in a damp Air. A strong Solution of it will shoot into long Crystals like Needles, whose Sides, at least some of them, have very evident Parallelograms. If they are kept in a close Vessel for many Years, they will retain their Firmness and Transparency, which shews that the Nitre is much more predominant than the Sea Salt.

Doctor *Grew* observes, that the Substance like Cream, which rises on the Surface of the Water while boiling, will ferment with Acids, and will seem to have a kind of Heat; and yet it will have

no manner of Taste when burnt with Lime. . Dr. *Rutty* observes, that the earthy Matter will sparkle on a red hot Iron, and will ferment with Oil of Vitriol but not with Vinegar. From what has been said it appears that this Water is chiefly impregnated with a calcarious Nitre, and a small Proportion of absorbent Earth, and some think with a little talky Matter. It is accounted one of the strongest purging Waters near *London*; and is noted for causing a great Soreness in Ano.

Of PANCRAS WATER near London.

PANCRAS lies on the North West Side of *London*, and in the Road to *Kentish Town*. It is a very small Walk from *Bloomsbury*, and the Church-yard is greatly noted for being the burying Place of Roman Catholics. The Water has scarce any Taste till one half is boiled away, and then it becomes bitter as well as quicker to the Taste. Dr. *Shaw* observes that the same thing will happen with the Addition of Spirit of Sulphur, by which Means it will resemble the common purging Waters of *Acton* and *Dulwich*. Hence it follows, that Water impregnated with an equal Proportion of calcarious Nitre may prove more or less bitter according to the Proportion of the combined Acid.

Dr. *Shaw* has observed that it will depomite a copious white Sediment with Oil of Tartar, and there will be a white Incrustation on the Sides of the Glass with Spirit of Sal Ammoniac, as well as a white grumous Sediment. It will yield a blackish grumous Sediment with the Solution of Silver, and a small white Sediment with that of Sugar

Sugar of Lead; but with a Solution of Allum there will be a small Grumosity.

There will be a small Fermentation produced with Oil of Vitriol, Oil of Sulphur and Spirit of Salt; it being boiled with equal Parts of Milk, it will curdle it, and the Whey will be clear. It will turn Beef reddish when boiled in it; and with Syrup of Violets it will turn Green. Dr. *Shaw* takes Notice, that Galls will not affect its Colour, from whence he concludes it does not partake of Iron. But Dr. *Rutty* affirms that the Trial that he made with Galls turned the Water Green, which is the characteristic of calcarious Nitre; at first the Water became wheyish, but after standing four or five Days it became of a deep Green almost to the Bottom of the Glass. Sumach changed it to a bright Green, which became deep in two or three Days; and with Ash Bark it has a blueish Circle with an Amber Colour underneath; with Logwood it turned to a deep Red, with *Brazil* Wood to a pale Crimson, and with Rhubarb to a deep Orange.

A Gallon of this Water after Evaporation yielded five Drams of Sediment of a whitish Colour, of a saltish and strongly bitter Taste in the Throat. It will ferment and emit an acid Fume with Oil of Vitriol, which *Shaw* observes to be the same with the Fume of Aqua Fortis; from whence he concludes the impregnating Salt is not Sea Salt, but rather a calcarious Nitre. It will ferment a little with Vinegar, and turns of a pale Green with Syrup of Violets, though but slowly. It will grow a little moist in a damp Air, and will rise in Blisters on a red hot Iron. The earthy Part of the Sediment in Proportion to the Salt, is as 104 to five. The Salt itself is of a

brownish Yellow, with a nauseous bitter Taste, and a strong disagreeable Smell. It will ferment with Oil of Vitriol, and send forth an acid Vapour; but Spirit of Salt has little or no Effect upon it. A Pint of Milk will curdle if boiled with half a Dram of the Salt, and the Whey will be clear. With Syrup of Violets it will turn of an obscure Green, and will rise in Blisters on a red hot Iron, as well as grow damp in the Air. The Solution placed in an upper Room will shoot into long nitrous Crystals; and yet, which is strange, it will not do the same in a Cellar. The earthy Matter will flame on a red hot Iron, and will ferment with Oil of Vitriol; when calcined it will turn white, and then red with the Solution of corrosive Sublimate; but it has no Taste of Lime. Hence it appears that *Pancras* Water is impregnated with a calcarious Nitre; it is considerably diuretic, and somewhat purgative; whence it may be of Service in the Stone, Gravel, and similar Complaints.

Of BARNET and NORTHALL WATERS in Hertfordshire.

THE *Barnet* here mentioned is not that commonly called *High Barnet*, that lies in the Road from *London* to *St. Alban's*, but *East Barnet* which lies two Miles South East of the former, and is a pleasant Village near *Wheistone* and *Endfield Chace*; it was formerly more frequented than it is at present, on account of its Medicinal Spring, which was found out above 100 Years ago. *Northall* lies about three Miles North of *High Barnet*, and consequently about fourteen Miles

Miles North East of *London*. It receives its Name from *Northaw*, which is the same as the *North-grove*; there having been a Wood here, which belonged to the Monastery of *St. Alban's*. In the Reign of Queen *Elizabeth* there was a stately House built here by the Earl of *Warwick*, whose present Proprietor allows the Rent of the Wells to the Poor of the Parish.

The Waters of both these Wells seem to be much of the same Nature, and when bottled they generally continue clear and sweet; though some few will have a disagreeable Smell; but it does not hurt the Operation of the Water. That of *Northall* is a little brackish and bitterish in the Throat; but not so nauseous as that of *Epsom*. When it is evaporated to one half, it will become intensely bitter. *Barnet* Water is bitterer than the former; but they both will curdle with Soap, and let fall a large grumous Sediment with a Solution of Salt of Tartar; that of Sugar of Lead will precipitate a white Sediment, as well as the Solution of Silver. But with the Solution of Allum they will let fall white Grumes, which show that they are not alluminous, as some have formerly thought. *Northall* Waters will not ferment with Oil of Vitriol and Spirit of Salt; but with *Barnet* Water they will; both will curdle Milk with a clear Whey. Beef boiled in either will become of a pale red, and with Galls they will turn wheyish, with a green Circle near the Surface, that descends lower the second and third Day. Sumach will turn *Barnet* Water of a greenish Colour, with a green Cloud that descends deeper in two Days. They both turn Logwood of a deep red, and Ash-Bark gives them a blue Circle on the Surface.

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The Evaporation of a Gallon of *Northall* Water will yield four Drams and twelve Grains of a very white Sediment, with a Whiteness on the Sides of the Vessel. This Sediment appears warm on the Tongue, with a nauseous bitter Taste; together with one somewhat like that of Urine. It will turn of a pale bright Green with Syrup of Violets, and will ferment pretty much with Spirit of Violets, though but little with Vinegar. A Gallon of *Barnet* Water will yield five Drams and twenty-eight Grains of a brackish bitter Sediment; but Mr. *Boyle* acquaints us that he got a Dram from every Pint.

The *Northall* Water had a Sediment that contained eight Grains of an earthy Matter to every four Scruples of Salt; but in the *Barnet* there was eleven Grains to two Drams and twenty-seven Grains. The Salt of *Northall* Waters, separated from the Earth, is of a pale Rusty Colour, of a brackish nauseous Bitter and empireumatic Taste. The Salt of *Barnet* Water is White, actually warm, a little pungent on the Tongue, and bitter in the Throat. The Salt of *Northall* Water raised no Fermentation with any Acid; but with Oil of Vitriol it would emit a Fume; but that of *Barnet* neither fomented nor fumed. They both curdle Milk with a clear Whey; and the Salt of that of *Northall* rubbed on boiled Mutton turned it Red by Spots. They both turn of a pale Green with Syrup of Violets, and they will both dissolve in twenty-four times their own Weight of Water; the earthy Matter of both will sparkle on a red hot Iron. Hence it appears, the Salt of both these Waters is a calcarious Nitre, with a small Mixture of Sea Salt, and a little Lime Stone. They have both a purging
Quality,

Quality, though they are not above half so strong as *Empsom* Water; but that of *Barnet* is the strongest.

Of HOLT WATER *in* Wiltshire.

HOLT is a Village in *Wiltshire*, six Miles East of *Bath*, and two North-east of *Bradford*. It is of great Note, except for the medicinal Spring, which was first taken Notice of in 1713, on Account of a Child being cured by it, that was over-run with scrophulous Sores. It is heavier than common Water by four Grains in two Ounces, and it lets fall a gross grumous Sediment with Oil of Tartar. When mixed with Spirit of Sal Ammoniac, a white crusty Substance adheres to the Side of the Glass, as well as with a Mixture of Sugar of Lead; but a Solution of Silver precipitates a large white Sediment, and with that of Allum one that is small; whence it appears it is but an alluminous Water.

It will not lather with Soap; but Oil of Vitriol will cause a considerable Fermentation, tho' Vinegar will cause only a small Bubbling. When boiled with equal Parts of Milk, it will yield a strong Curd, and with Syrup of Violets it will turn greenish, after standing for some Time; Galls will also turn this Water Green, as will Sumach after four Days standing. Logwood turns it of a deep Red, *Brazil* Wood a Scarlet, and Rhubarb a pale Amber Colour. While it is evaporating over the Fire, it will throw up a thick whitish calcarious Scum, that will ferment with Spirit of Vitriol, and has a nauseous bitter Taste. A Gallon of this Water will yield one hundred and seventy-six

venty-fix Grains of Sediment, which is very white, and will ferment with Acids, and turn greenish with Syrup of Violets; it has a saltish bitter Taste, will grow moist in a damp Air. *Lewis* affirms, that some Part of the Sediment will shoot into Crystals like Needles, and others into Prisms, with thin Plates sticking to the Vessels. The earthy Part, according to some Experiments, is nearly equal to the Salt, though in others less.

The Salt is a Kind of calcarious Nitre, and requires ninety-fix Times its own Weight of Water when cold. When it is dissolved in distilled Water, it has a nauseous bitter Taste, and will discover a thick white Cloud when mixed with Oil of Tartar. A Solution of half a Dram in four Ounces of distilled Water, will turn of a deep Red with Logwood, of a pale Red with *Brazil*, and of a pale Amber with Rhubarb; it has also a pale blueish Circle with Ash Bark; but Galls or Sumach will not tinge it all after four Days standing, though the Water itself turned Green therewith. The Salt will ferment greatly with Oil of Vitriol, and emit an acid Fume; but not at all with Spirit of Salt or Vinegar. Half a Dram boiled with Half a Pint of Milk will curdle it, and the Whey will be clear. With Syrup of Violets it turns very slowly to a Green, and will turn a little moist in a damp Air; when thrown on red hot Iron, it will rise in Blisters, and has then a strong Smell.

From Dr. *Short's* Experiments it appears, that the Salt contained in *Holt* Water is principally a calcarious Nitre; and Dr. *Rutty* is of the same Opinion. The earthy Matter therein is very white, and will ferment with Spirit of Vitriol.
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and sparkle a little on red hot Iron; it turns of a pale Green with Syrup of Violets, though but very slowly, and after its Calcination for twelve Hours, it scarce acquired the Taste of Lime.

The Operation of this Water is more mild than other Springs of this Kind, on Account of the large Quantity of earthy Matter contained therein, which serves to envelop the Salt. In small Doses it is an alterative and a diuretic; but two Quarts will sufficiently purge. Its Virtues are to dilute, cool, absorb and strengthen, besides the Operations just mentioned. It is used both externally and internally; externally, Rags or Sponge dipt therein will cure scrophulous Ulcers, attended with carious Bones; but then it must be taken inwardly at the same Time. It will also cure inveterate running Ulcers of the Legs and other Parts, Breakings out of the Skin, attended with a white Scurf, and others that are accompanied with great Heat, and sharp corrosive Humours. It is good for sore Eyes, the Piles, and Ulcers of a cancerous Nature, when used outwardly and drank inwardly. It never fails of giving an Appetite, and is recommended to strengthen the Relaxation of any Part; likewise some affirm it will cure old Gleets and the Fluor Albus.

Of the WATER of MORETON in Shropshire.

MORETON, or rather *Moreton Say*, is a Village in *Shropshire*, two Miles West of *Market Drayton*, remarkable for a Mineral Water found therein. It will not lather with Soap, but it curdles Milk, and yields a white Sediment with

with Oil of Tartar; it turns Green with Syrup of Violets, and Scarlet with Logwood.

A Gallon of this Water, after Evaporation, will yield two hundred and seventy-seven Grains of Sediment, whereof seventy-six is Earth, and the rest a calcarious Nitre according to Dr. *Short*. This Sediment is white, saltish, and bitter in the Throat; it ferments a little with Vinegar; but with Spirit of Salt and Oil of Vitriol it is more remarkable; besides, this last will excite an acid Fume. It turns of a pale Green speedily with Syrup of Violets; but it will not sparkle nor blister when thrown on a red hot Iron. *Rutty* tells us in the Experiments he made, this Water yielded nearly equal Parts of a white Salt and Earth. The Salt is peculiarly sharp, with a pungent Taste; but it has an intense nauseous Bitter in the Throat.

This Salt will ferment and fume with Oil of Vitriol, but not with Spirit of Salt nor Vinegar. Half a Dram of it boiled with Half a Pint of Milk, will produce a strong Curd, and a clear Whey; and in a damp Air it will become moist. It turns of a pale Green with Syrup of Violets in twenty-four Hours Time; and when thrown on a red hot Iron, there is but very little blistering or crackling. It will turn Purple with the Solution of Silver; and Beef salted with it, and afterwards boiled, will become of an obscure red. It will dissolve in twenty-four Times its own Weight of distilled Water, and then will precipitate a gross white Grume with Oil of Tartar; it will turn red with Rhubarb, and will discover a blue Circle with Ash Bark; but it will not turn Green with Syrup of Violets.

The earthy Part will ferment strongly with Oil of Vitriol, though but very little with Vinegar; it will turn of a pale Green with Syrup of Violets; but has no Taste of Lime after an Hour and a Half's Calcination; when rubbed with the Solution of corrosive Sublimate in Water, it will turn of a brownish red.

Dr. *Short* declares that this Water is an excellent cooling Diuretic and Cathartic, and that it purges very briskly. It bears a great Resemblance to *Holt* Water, only the Taste is more pungent, and consequently it is very likely to have the same Virtues; however it deserves a farther inquiry.

Of KINALTON WATER in Nottinghamshire.

KINALTON, or *Kynolton*, is a Village of *Nottinghamshire*, and nine Miles South-east of *Nottingham*. The Well lies in a small Close, on the Right Hand at the West End of the Village; and the Water is clear, pleasant, cooling, and a little saltish according to Dr. *Short*. It grows whitish, and curdles with Oil of Tartar and Spirit of Hartshorn, as well as with the Solution of Sugar of Lead; but with that of Silver it turns blackish, and lets fall a white Sediment. It undergoes no Alteration with acid Spirits, but it will turn of a beautiful light red with Tincture of Logwood.

The Evaporation of a Gallon of this Water will yield two hundred and eight Grains of a beautiful white Sediment, a fourth Part of which is a white, fine, alkaline Earth, and the Remainder a remarkably pure clear Nitre; but the intire Sediment has the nauseous bitter Taste proper to calcareous

carious Nitre. It will ferment with Vinegar, besides which it will emit an acid Fume with Oil of Vitriol; and it will turn of a bright Green with Syrup of Violets. It will neither sparkle nor flame when throw on a hot Iron; but it will melt a little, and rise in Blisters in some small Spots.

Three Drams of the Solution of the Sediment, boiled in three Pints of distilled Water to a Quart, and filtrated, has the same nauseous bitter Taste, will curdle with Soap, and exhibit a gross white Sediment with Oil of Tartar. With Spirit of Sal Ammoniac there will be a white Incrustation on the Sides of the Glass; and the Solution of Silver will precipitate a gross white Sediment; likewise there will be a white Sediment with that of Sugar of Lead. It turns to a Crimson Colour with Logwood, and to a Scarlet with *Brazil* Wood; but both of them will quickly fade; it becomes of a pale Amber Colour with Rhubarb, and has a light blue Circle with Ash-bark, but it yields no Tincture with Galls or Sumach.

The Salt, when separated from the earthy Parts, is White, and has the same nauseous bitter Taste as above. It will not ferment with Spirit of Salt nor with Vinegar, nor does it boil so much with Oil of Vitriol as other purging Nitre; but it will grow warm and emit an acid Fume. It turns Purple with the Solution of Silver, and becomes of an obscure Green with Syrup of Violets. It rises in small Blisters when thrown on a red hot Iron, and will entirely dissolve in twenty-four Times its own Weight of distilled Water. The earthy Substance will sparkle much when thrown on a red hot Iron, and ferment with Oil of Vitriol, but not at all with Vinegar; it will turn
Green

Green with Syrup of Violets, and after an Hour's Calcination, will become yellow and red with the Solution of corrosive Sublimate.

This is a purging Water, and has about half the Proportion of Contents as *Epsom Water*; but will not work except drank plentifully.

Of COMNER or CUMNER WELL in Berkshire.

COMNER, or *Cumner*, is a Village in *Berkshire*, three Miles West of *Oxford*, and the Water is always of a whitish Colour, especially in Summer when the Well is low, it being produced of Lime Stone, according to *Dr. Short*. With Oil of Tartar it lets fall a white Sediment, but with Spirit of Hartshorn turns to a Pearl Colour; with the Solution of Silver it turns to a purplish Pearl Colour, and to that of Milk with the Solution of Sugar of Lead; but with Syrup of Violets it becomes Green.

A Gallon of this Water will yield two hundred and ninety-six Grains of Sediment, whereof, according to the same Physician, seventy-six Grains are Lime Stone, and the Remainder a calcarious Nitre. The Sediment is of a dark brown Colour, of a saltish and very bitter Taste. It will ferment with Vinegar, as well as with Oil of Vitriol, and will turn Green immediately with Syrup of Violets. It will neither sparkle nor blister when thrown on a red hot Iron; but will burn to a black Colour. The Salt contains but a very small Proportion of Earth, namely, four Grains to an hundred and nineteen. The Salt itself is of a brown, yellowish Colour, and has a saltish nauseous bitter Taste.

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This Salt will dissolve in twenty-four Times its own Weight of distilled Water ; and will let fall a gross white Grume with Oil of Tartar ; but with Ash-bark it will discover a blue Circle, though it will not turn green with Syrup of Violets ; however, the Salt in Substance will turn instantly green when rubbed with that Syrup, and will become Purple with the Solution of Silver. It will not ferment with Vinegar nor Spirit of Salt ; but with Oil of Vitriol it will. Half a Dram boiled with half a Pint of Milk will curdle it, and the Whey will be white. Beef rubbed with it, and boiled after it has lain twenty-four Hours, will become as red as with Salt-petre. With Sal Ammoniac, or Salt of Tartar, a pungent urinous Smell will be excited, in the same Manner as with the Natron of the Ancients ; it will not readily imbibe Moisture, unless the Air is damp ; but it will keep dry in a corked Phial for many Years. It will melt and rise in Blisters when thrown on a red hot Iron, with a little stinking Smell. The earthy Substance will ferment a little with Vinegar, and much more with Spirit of Salt ; and it will quickly turn green with Syrup of Violets ; after two Hours Calcination it becomes a very imperfect Lime ; for it will not taste but very little of it, either in Substance or infused in warm Water, and yet it will turn red with the Solution of corrosive Sublimate.

The Salt of this Water is a Kind of calcarious Nitre, but inclines more to an Alkali than most others of this Class. A Quart or two of this Water will purge a labouring Country Fellow, which is the chief Effect taken Notice of ; but it may, doubtless, be applied to much better Purposes by a sagacious Physician.

of

*Of MALTON SPA in the North-Riding of
Yorkshire.*

MALTON, otherwise called *New Malton*, lies in the Road from *York* to *Scarborough*, and is nineteen Miles North-east of the former, and twenty-four South-west of the latter. It is half a Mile long on the Road, but is more transverse. It is a pretty good Borough Town, and is divided into the Old and New; in both of which there are three Parish Churches; it is watered by the River *Derwent*, and the *Saturday's* Market is said to be as good as any in *Yorkshire*. There is a Stone Bride over the River, which is navigable to this Place, and it had formerly a Castle, the Ruins whereof are yet to be seen.

The Spring lies at the West End of this Town, and it is so strongly impregnated with Chalybeate Qualities, that it will preserve its Virtues intire, though transported to distant Parts; for it still continues clear, and has a strong inky ferruginous Taste, and is bitterish in the Throat.

It will curdle with Soap, and let fall a white Cloud with Oil of Tartar; but with Spirit of Sal Ammoniac it is of a greenish White. With the Solution of Allum it continues very clear, and almost clear with the Solution of Copperas; but with that of Sugar of Lead it exhibited a white subtile Cloud, according to Dr. Ratty; but in consequence of the Trial of Dr. Short, it had a larger brownish Sediment. With the Solution of Silver, it let fall a whitish Sediment, as the former Author declares; but according to Dr. Short a brownish Cloud. With the Solution of corrosive Mercury sublimate, it continued clear; but

with Dr. *Short* of a dark white, from whence he is of Opinion, it contains a Portion of Sulphur. With Lime Water it turned to a subtile Whiteness, and on standing let fall an okerous Grume.

All these Experiments plainly show, that it contains a very small Proportion of calcarious Earth. It will not ferment with Oil of Vitriol, nor Spirit of Salt; but it will curdle with Milk, and the Whey will be clear. It turns Green with Syrup of Violets, and with Ash-bark has a subtile blue Cloud; but with Rhubarb it becomes of a dunnish Colour, tending to an Olive Colour. With Galls it will become Purple, and of a dilute Purple with Sumach, but with Cork it became of a blackish Colour; with Logwood it will turn Blue, which in three Days Time changes to Purple; however, most of these Colours soon fade.

This Water is generally covered with a thick reddish Scum; and during Evaporation it will have a thick white Scum. The Oker that it precipitates spontaneously is of the Colour of Rust of Iron, and will sparkle when thrown on a red hot Iron; this will turn red by Calcination, and some small Parts of it will be attracted by the Loadstone. After the Evaporation of seven Pints, three Drams and a half of a reddish Brown Sediment remained, which had an austere bitterish Taste. This Sediment will not ferment with Acids, but it will turn greenish with Syrup of Violets, and when thrown on a red hot Iron, it will neither blister, nor crackle, nor sparkle.

Two Drams of the Sediment, boiled in a Quart of distilled Water to a Pint, and filtered, has a bitterish Taste, and with Oil of Tartar lets fall a gross white Grume, and a small one with Spirit of
Sal

Sal Ammoniac ; but with a Solution of Silver, it precipitates a gross Cloud. These Experiments shew that the Salt is a calcarious Nitre, though different in some Sense from others ; it will not ferment with Oil of Vitriol, nor Spirit of Salt ; but it will turn greenish with Syrup of Violets. Half a Dram boiled with half a Pint of Milk, will produce Curds with a clear Whey. The Salt contained in the Sediment is not quite so large as the Earth, which is of a reddish white Colour. This Earth will not ferment with Oil of Vitriol, nor Spirit of Salt.

Dr. *Short* inform us, that the Mud and Scum of this Water will dry up and heal old Ulcers, Scabs, and Tetters to a Wonder. Internally it will purge, but not so quick as the Water of *Scarborough* ; however, it works pleasantly by Stool and Urine ; and if the Stomach be foul, it will vomit the first Day or two. The common Dose is from three Pint to six ; but some think smaller Doses would be more proper. It is good in the hypochondriac Melancholy, in the Beginning of a Dropsy, in an Asthma with spitting of Blood, in internal Ulcers and Bleedings, and in Obstructions of the Liver, Spleen, Uterus, and Mesentery ; as also in a Relaxation, Weakness, Paleness, and Languidness of the Body, it being both a Strengtheners and Deobstruent, as well as a Purge.

Of CLIFF or KING'S CLIFF WATER in Northamptonshire.

KING'S CLIFF is a Market Town in Northamptonshire, eight Miles South of Stamford, and seven Miles North by East of Oundle; but sixty-six North of London. It is remarkable for nothing but its Mineral Water, though formerly King Henry VIII. had a Park here.

The Water both smells and tastes of Iron, and lets fall a white Sediment with Oil of Tartar and Spirit of Hartshorn; but with Solution of Silver it is of a purplish Pearl Colour. It curdles with Milk, especially when double the Quantity of Water is added to the Milk. With Galls it precipitates a Purple Sediment, turns of an opake Red with Logwood, and of a deep Green with Syrup of Violets.

According to Dr. Short, a Gallon of this Water yields an hundred and forty Grains of Sediment, seventy-five of which are Lime Stone and Oker, and sixty-five a calcarious Nitre. The Sediment has an odd Flavour, and has a bitterish and brackish Taste; it will ferment with Vinegar, turn green with Syrup of Violets, and sparkle a little on red hot Iron. The Salt separated from the earthy Parts, is of a light brownish Colour, with a nauseous bitter Taste. It will not ferment with Spirit of Salt, but with Oil of Vitriol it will; half a Dram boiled with half a Pint of Milk, will curdle it, and the Whey will be clear. It turns of a Sea-green Colour with Syrup of Violets, and soon grows moist in a damp Air.

The earthy Part, in Proportion to the Salt, is as one to five, which is of a calcarious Nature,

as

as appears by its fermenting with Vinegar, and turning of a bright green with Syrup of Violets, acquiring the Taste of Lime by Calcination, and turning reddish with the Solution of corrosive Sublimate.

This Water is of a chalybeate laxative Nature, and is impregnated with Iron and calcarious Nitre, with a small Quantity of a Sea Salt, and a calcarious earthy Substance. It will not purge a strong Person, unless he drinks three, four, or five Quarts thereof; but it has been used with great Success in Disorders from Obstructions, in Eruptions of the Skin, and has cured several lame Persons, according to Dr. *Short*.

Of CARLTON WATER in Lancashire.

CARLTON is a Village in *Lancashire*, ten Miles South-west of *Preston*, and seven North of *Ormskirk*. It is remarkable for nothing but its Mineral Water, which is somewhat of a Chalybeate, but not much; and it has a faint Smell of Sulphur when just drawn, but it tastes sweetish when the Steam is gone off, according to Dr. *Short*. It will curdle with Soap, turn white with Oil of Tartar, and likewise with Sugar of Lead; but with Solution of Silver it changes to a purplish Pearl Colour. It curdles in Milk, has a Pink Sediment with Galls, changes to a deep Blue with Logwood, and to a green with Syrup of Violets.

A Gallon of this Water, after Evaporation, with leave two hundred and thirty-six Grains of Sediment behind it, whereof one third Part is Earth, according to the above-mentioned Author.

The Sediment is White, of a brackish Taste and bitterish in the Throat; and it will ferment more with Acids than the Sediments of many other purging Waters; it also emits an acid Fume with Oil of Vitriol. It turns of a bright green with Spirit of Violets, and when thrown upon red hot Iron, neither blisters, crackles or sparkles, but emits a fetid Smell.

The Salt separated from the earthy Matter is brackish and very bitter in the Throat; the Solution of half a Dram in half a Pint of distilled Water, precipitates a large white Grume with Oil of Tartar, and a white Incrustation on the Sides of the Glass with Spirit of Sal Ammoniac; but it curdles with Soap, and turns purplish with the Solution of Silver. It emits an acid Fume with Oil of Vitriol, but will not ferment, nor change with Vinegar. Half a Dram boiled with half a Pint of Milk curdles it with a clear Whey, and it turns slowly to a Green with Syrup of Violets. The Salt thrown on a red hot Iron will melt but not crackle, nor rise in Blisters, but it will emit a suffocating Fume. It grows moist in a damp Air, and requires forty-eight times its own Weight of distilled Water to dissolve it.

The earthy Matter is as twenty-two Grains to sixty-four of the Salt; and it will soon turn to a bright Green with Syrup of Violets; it will ferment greatly with Oil of Vitriol and Spirit of Salt, and it will whiten in Specks when calcined, with somewhat of the Taste of Lime; it will turn yellow and reddish with the Solution of corrosive Sublimate. It is a more powerful Absorbent than many other nitrous Waters, and three or four Pints will purge very briskly according to Doctor Short.

Of

*Of the WATER of KIRKBY THOWER in
Westmoreland.*

Kirkby Thower is a Village eight Miles East of *Penrith*, and four North-east of *Appleby* in *Westmoreland*; it is seated near the River *Eden*, and below it are large Ruins of an ancient Town, where *Roman* Urns and Coins are now and then dug up. These are called by the Vulgar *Whelp Castle*, and the old Military Way runs through them, called *The Maiden Way*, because it begins at *Maiden Castle* in the North Riding of *Yorkshire*.

This Water is a weak purging Chalybeate, according to Dr. *Short*, and is exceeding clear, sweetish, and has a little Taste of Steel. It grows whitish with Alkalies and with the Sugar of Lead; but it turns to a clear Purple with the Solution of Silver. It becomes of a pink Purple with Galls, a red Purple with Logwood, and a deep green with Syrup of Violets.

A Gallon of this Water after Evaporation will leave 190 Grains of Sediment behind it, of which 140 are Lime Stone, and 50 a calcarious Nitre, according to the above-mentioned Author. Dr. *Rutty* affirms, it is White like Lime, and is of a nauseous bitter Taste in the Throat, proper to calcarious Nitre. It will ferment greatly with Spirit of Salt of Vinegar, and yet but little with Oil of Vitriol. It becomes Green with Syrup of Violets, and will sparkle a little on a red hot Iron.

The Salt when separated is bitter in the Throat, and will not ferment with Spirit of Salt, nor with
Oil

Oil of Vitriol, which is an Argument of its being a purer Nitre than that of most Mineral Waters; which is confirmed by its not growing moist in the Air.

This Salt dissolved in distilled Water in the Proportion of a Dram to a Pint, and boiled to half a Pint, will curdle with Oil of Tartar, and turn Mutton red. It will not dissolve entirely in forty-eight times its own Weight in distilled Water; nor will it blister, sparkle or crackle, when thrown on a red hot Iron; but it will turn of a pale green with Syrup of Violets. The earthy Matter will ferment greatly with Spirit of Salt, and change to a deep green with Syrup of Violets. It becomes of a whiter Colour by Calcination, and turns reddish with the Solution of corrosive Sublimate.

This Water is a more powerful Absorbent than most others of this Kind, and it will purge well; but then the Patient must drink to the Quantity of three or four Quarts.

Of HARTLEPOOL WATER in the Bishopric of Westmoreland.

H*artlepool* is a Market Town, commodiously seated on the Sea Shore, and it is encompassed on all Sides by the Sea, except towards the West; this again is surrounded by Rocks and Hills, except on the East. It is an ancient Corporation, and had a Market, which is now disused, and though it has a good Harbour it is not very rich; because it is chiefly made Use of by the *Newcastle* Colliers, who take shelter here in Strefs.

Stress of Weather. It is fifteen Miles South West of *Durham*, and 236 North by West of *London*.

This Water is a laxative Chalybeate, of a pleasant Taste, and it is lighter than common Water according to *Dr. Short*. As it rises up it discovers a little Steel and Sulphur, which are lost after standing a short Time; infomuch that if it is carried to distant Parts it becomes a mere purging Water. It precipitates a white Sediment with Salt of Tartar, as well as the Solution of Silver, and becomes whitish with Spirit of Hartshorn; it turns of a pink Colour with Galls, Green with Syrup of Violets.

A Gallon of this Water will yield 120 Grains of Sediment when evaporated, whereof two Parts are Nitre, one Sea Salt, and the rest Lime Stone, according to *Dr. Short*. It has a brackish Taste but not bitter, and will ferment greatly with Oil of Vitriol, emitting an acid Fume; it will also ferment much with Spirit of Salt, and but a little with Vinegar. It turns of a deep Green with Syrup of Violets, and thrown on a red hot Iron it will neither sparkle nor crackle, but emits a faint fetid Smell. It contains about fifty-four Grains of Salt to five of Earth.

The Salt consists partly of a calcarious Nitre, as appears from its curdling with the Solution of Salt of Tartar and of Silver, from its turning Mutton red, and from its melting and rising in Blisters on a red hot Iron.

It is an excellent Antiscorbutic, and has wonderful Success in bilious and habitual nervous Colics, in Lameness, in Pains of the Stomach and Indigestion, in the Gravel, in Womens Obstructions, in Hypochondriac Melancholy, in the Cachexy,

Cachexy, in Weakness of the Back, hectic Heats, and recent Ulcers, according to Dr. Short.

Of ORSTON WATER in Nottinghamshire.

ORSTON is a Village in *Nottinghamshire*, three Miles East of *Bingham*, twelve East of *Nottingham*, and ten South of *Newark*. It is remarkable for nothing but its Mineral Water, which when suffered to stagnate in its Basen, has a disagreeable rough, harsh Taste; but at its rising up out of the Spring, has a sweetish Chalybeate, agreeable though somewhat roughish Taste. When first poured into a Glass it sparkles and flies, and renders the Head of the Person that drinks it giddy. It will curdle with Soap and Oil of Tartar; and it will turn whitish at first with Spirit of Hartshorn, after which it lets fall a yellowish brown Sediment; but with Spirit of Salt is remained very clear, and with Syrup of Violets turned to a pale muddy green; though with Syrup of Cloves to a very fine green.

When taken immediately as it springs up, it turns to a beautiful opake violet Colour; with Tincture of Galls and with Tincture of Logwood to a pale Blue.

Every Gallon of this Water will yield 128 Grains of Sediment after Evaporation, wherein the Proportion of Earth to the Salt is as twenty-seven to nine. The Salt is of a brown Colour, and has a brackish Taste with a Bitterness in the Throat. It will not ferment with Oil of Vitriol, nor Spirit of Salt, but half a Dram boiled in half a Pint of Milk will curdle it with a clear Whey; and

and on a red hot Iron it melts like Wax and rises in Blisters.

This Water is a rich Chalybeate if taken up as it springs, and has also a considerable Quantity of Sulphur. The predominating Salt appears to be a calcarious Nitre mixed with a small Quantity of Sea Salt.

This Water will purge those of a gross Habit of Body, while it is only laxative to others. It will make the Tongue, Throat, and Stools of the Drinkers perfectly black. It is found to be good in the Hypochondriac Melancholy, Scurvy, Want of Appetite, Indigestion, Pain of the Stomach, Costiveness, Stoppage of Urine from Sand or Gravel in the Passages; in the beginning of Obstructions of the Liver, Spleen, and other Viscera; as also Ulcers of the Lungs and spitting of Blood, according to Dr. Short.

Of CROFT WATER in Yorkshire.

CR O F T is a Village in the North Riding of *Yorkshire*, and seated on the Confines of the Bishopric of *Durham*, and it stands entirely upon Lime Stone. The Spring is in this Parish, and is a fine clear sparkling Water, according to Doctor Short, with a strong Smell of Sulphur. It curdles with Soap, turns White with Oil of Tartar and Spirit of Hartshorn; as also with the Solution of Sugar of Lead; but it becomes of a blueish White with the Solution of Silver, and it curdles with Milk.

A Gallon, after Evaporation, leaves behind 177 Grains of Sediment, which is very White, and has a strong Smell of Hawthorn Flowers; it consists

sists of Lime Stone, Nitre, and Sea Salt; but the Nitre is double or treble to the latter. The nitrous Crystals obtained from this Water, is of a nauseous bitter Taste; and they will turn whitish with Oil of Tartar. It is a purging Water, if drank from four Pints to nine; and is said to perform many eminent Cures both by drinking and bathing.

Of UPMINSTER WATER in the County of Essex.

*U**Pminster* is a Village in the County of *Essex*, seven Miles South of *Brentwood*, and eight East of *Barking*. The Water is bitter, with a sweetish nauseous Taste, according to *Allen*; and it will curdle with Oil of Tartar, though not very soon, however it will strongly with Spirit of Hartshorn, and it will curdle in small Grumes with Soap. It will precipitate a large white grumous Sediment with a Solution of Allum, and let fall a white Cloud with Lime Water. If Silver be thrown in it for a Quarter of an Hour, it will turn of a dusky copperish Colour. The Solution of Copperas changes it to a dark dun Colour, and that of Silver to a Yellow, with a livid Circle on the Surface, and a large white Grume.

From these and some other Experiments it appears to be a sulphureous Water, of a considerable Strength, and a Gallon of it after Evaporation yielded 332 Grains of Sediment. When about a Quart of it was exhaled it became intensely bitter, and brown Flakes ascended towards the Surface when it grew hot; however it lost its fetid Smell, but retained its bitter Taste. The Sediment is very white, and is of a nauseous bitter Taste, accompanied with one that is brackish
and

and somewhat urinous. The Salt, when separated from the earthy Matter, is of a whitish Yellow, and has the same Taste as the Sediment. It is chiefly a calcarious Nitre, mixed with a little Natron and Sea Salt. The Water itself is purgative and diuretic, absorbs Acidities, strengthens the Stomach, checks Vomiting, and is a proper Purge in Agues and Dropfies; or rather where there is a Disposition to these Diseases.

Of SHAPMORE WATER in Westmoreland.

Shapmore is a marshy Heath, lying between Mountains, having *Shap* towards the North, and *Orton* on the South; and the Well is about three Miles to the South of *Shap*, and about three or four Miles to the North-west of *Orton*. Likewise it is but a little to the East of the Road from *Kendal* to *Penrith*, and about half Way between both.

This Water seems to be of a sulphureous Nature, for it has a strong fetid Smell, and a sensible Bitterness; but this soon goes off when it evaporates over the Fire. It is a light Water, but it will curdle with Soap, and lets fall a large white Sediment, with a clean Solution of Pot Ashes. That of Silver caused it to let fall a dark brown Cloud, with a white grumous Sediment; and Silver itself soon became of a dark Copper Colour, which after longer standing turned blueish.

A Gallon of this Water yielded 376 Grains of a saline Sediment, with a very small Proportion of very white Earth. It is very white and of a salt pungent bitter Taste, and grows moist when exposed

exposed to the Air. It will ferment a little with Spirit of Vitriol, and will emit an acid Fume with Oil of Vitriol; but rubbed with Syrup of Violets it becomes of a Willow green in forty-eight Hours. It will melt but not flame when thrown on a red hot Iron; nor has it any remarkable fetid Smell, from whence it follows, that the Sulphur flies off when placed over the Fire. The earthy Part is very small in Proportion, and will sparkle greatly when thrown on a red hot Iron; but it will not ferment with Spirit of Vitriol.

The Virtues of this Water have not been inquired into so much they deserve; however it has been casually found to work by Stool and Urine, and three Pints has proved a strong Purge. It has cured the Piles in a Person afflicted with them fourteen Years, and it has been used by common People to cure rheumatic Pains in the Joints, by rubbing it warm on the Parts affected.

Of ALFORD WATER in the County of Somerset.

ALFORD is a Village in *Somersetshire*, twenty-four Miles South of *Bath*, nine South-east of *Glastenbury*, and eleven South-south-east of *Wells*; it is also 121 Miles West by South of *London*. It is only remarkable for its Mineral Water, which was first discovered in 1670, from the Pigeons that flew thither in great Numbers to drink the Water, well saturated with Salt, which it deposited like a Sediment, from the Water that runs to waste in the high Road, which passes through this Village, towards *Barnstaple* in *Devonshire*.

It

It is of a nauseous bitter Taste, and it will curdle with Soap, as well as yield a white grumous Sediment with the Solution of Pot Ashes ; with Spirit of Sal Ammoniac there will be an Incrustation on the Glass ; and with that of Sugar of Lead it will turn whitish, with a very thin whitish Crust on the Sides of the Glass, and a small white Sediment. With the Solution of Silver there will be a white grumous Sediment, intermixed with black Spots. With Syrup of Violets it turns of a dilute green ; with Sumach green, and Galls will produce a greenish Cloud on the Surface, which descends deeper in two or three Days.

According to the Experiment of *Guidot*, there is nearly six Drams of Sediment to a Gallon, and the Water while evaporating becomes very bitter and salt. It will turn Green with Syrup of Violets, and ferment with Spirit of Vitriol. A Dram of the Sediment, dissolved in six Ounces of distilled Water, will turn intensely bitter, and will yield a Scruple of Salt to four Grains of earthy Matter. The Salt is brown and of a saltish bitter Taste, and will not ferment with Spirit of Vitriol ; when thrown on a red hot Iron it will melt quickly, and turn to small Blisters. The earthy Matter will flame on a red hot Iron, and ferment in large Bubbles with Spirit of Vitriol.

From the various Experiments made with this Water, it appears to be impregnated with calcareous Nitre, and Sea Salt, as also a little Lime-Stone. *Guidot* informs us it is cooling, cleansing, penetrating, and will attenuate gross Humours ; that it will destroy Acrimony, and temperate Ebullitions of the Blood ; that it is good in the Scurvy, Jaundice, and all sorts of Obstructions ;

that it cleanses the urinary Passages, purges briskly, and promotes Urine and Sweat. *Musgrave* has recommended this Water for the Prevention of the Colic attending the Gout, as also to prevent the symptomatic Gout, produced by the Scurvy, and attended with bilious Vomitings and a dry Skin; but then it must be observed that he prescribed other Things along with their Use.

Of SYDENHAM WELLS.

Sydenham is a Village, in the Parish of *Lewisham*, in the County of *Kent*, and the Wells that take their Name from thence are seated upon a Common near *Dulwich* in *Surry*. The Water is only a little bitterish, until a good Part of it has been evaporated; then it has a sensible bitter and brackish Taste. It will curdle with Soap, with the Solution of Pot Ashes it will let fall a white grumous Sediment, with an Incrustation on the Sides of the Glass like Lime, and the like with Spirit of Sal Ammoniac.

From these and other Experiments it appears, that this Water is impregnated with a calcarious Nitre and Sea Salt, joined to a little Natron and calcarious Earth. Two Quarts yielded two Drams and four Grains of a palish yellow Sediment, with a nauseous bitter Taste; it will ferment with Spirit of Vitriol, and turns of a bright Green on standing with Syrup of Violets. The Salt separated from the earthy Matter is of a pale yellowish brown, and partly white, of a nauseous bitter Taste with a little Brackishness. It seems to be much of the same Nature as *Epsom* Water, though not half so strong.

Of

Of LEMINGTON WATER in Warwickshire.

THIS Water takes its Name from *Lemington Hastings*, a Village in *Warwickshire*, three Miles South-west of *Dunchurch*, three Miles North by East of *Southam*, and eleven Miles East by North of *Warwick*. The Spring is about a Stone's Throw distant from the River *Leam*, and is only a common brackish or salt Spring, which will turn white with Spirit of Hartshorn, whitish with Oil of Tartar, and muddy with the Solution of Silver and Galls. A Gallon of this Water after Evaporation yield 960 Grains of Sediment, whereof thirty were calcarious Nitre, and the rest Sea Salt. Its Taste is evidently saltish, and it will partly crackle and fly with a red hot Iron, and partly melt and blister. It will ferment with Oil of Vitriol greatly, and emit an acid Fume, which it will not do with Spirit of Salt nor Vinegar. Half a Dram boiled with half a Pint of Milk will curdle it with a turbid Whey; which is more than common Salt does when used in the same Proportion; and yet it will not dissolve in so small a Quantity of Water as common Salt; when mixed with Syrup of Violets it became green after standing, and when rubbed with a Solution of Silver it turned Purple, according to *Dr. Short*. The Earth will ferment with Oil of Vitriol and Spirit of Salt, and turn green with Syrup of Violets.

Dr. Ritty thinks it is not an entire saline Spring, as *Dr. Short* supposes, because it will turn Purple with the Solution of Silver, and will partly melt in Blisters when thrown on a red hot Iron; but

be that as it will, it is certainly a strong Purge and Vomit, and is drunk by labouring People from two Quarts to three. It is noted for curing fore Legs, breakings out, and freeing Dogs from the Mange.

Of WISHERSLAKE WATER in Westmoreland.

*W*isherlake is a Village in *Westmoreland*, seven Miles South-west of *Kendal*, and not far from *Levens Bridge*, over the River *Can*. It has a neat Parochial Chapel, which was built and endowed by Dr. *Berwick*, Dean of *St. Paul's*, it being three Miles from the Mother Church of *Betham*. The Mineral Spring rises in a Morass near this Place, that is, about half a Mile from the Chapel.

This Water has a saltish Taste, and in Summer smells a little of Sulphur, and throws up a whitish Scum. With Oil of Tartar it throws down a pearl coloured Sediment, with the Solution of Silver a white Sediment, and with that of Sugar of Lead one that is milky. With Galls it precipitates a purple Sediment, with Sumach one of the Colour of Pease Bloom, and with Logwood a purple Mazarine; but with Syrup of Violets it turns to a deep Green.

A Gallon of this Water after Exhalation yields 547 Grains at a Medium, consisting chiefly of a Sea Salt and a calcarious Earth, according to Dr. *Leigh*, with a little Mixture of bitter purging Salt; to which perhaps may be added a little Iron and Sulphur, though scarce enough to deserve being taken Notice of. The Sediment has a very pungent saltish Taste, and will ferment greatly, and emit an acid Fume with Oil of Vi-
triol,

triol, and a little with Spirit of Salt, but scarce any with Vinegar.

From these and other Experiments it appears, that the impregnating Salt of this Water is chiefly Sea Salt, combined with a Kind of calcarious Nitre, a little Iron, and in some Seasons a small Matter of Sulphur. With regard to its Virtues, it has been found to have been of great Use in the Stone, Gravel, Worms, Want of Appetite, the Cachexy, Jaundice, and Dropfy.

Of ROUGHAM WATER in Lancashire.

ROugham is a Village in *Lancashire*, two or three Miles from *Cartmel*, and the Spring arises from the Bottom of a rocky Mountain. The Taste of this Water is saltish, or a little brackish, and it turns white with Oil of Vitriol, and Spirit of Hartshorn; but with Sugar of Lead a little milky, and with Solution of Silver yields a white Sediment. It turns green with Syrup of Violets, continues clear with Galls, becomes muddy with Sumach, and brown with Logwood.

This Water, by Evaporation, becomes lixivial and extremely brackish; and when gently exhaled it throws up red Scales to the Surface, which have a lixivial Taste, and will ferment strongly with an Acid. If Spirit of Hartshorn be dropped in, at the Beginning of the Evaporation, it causes a great Precipitation, with a sulphureous Smell; if Spirit of Vitriol be dropped into an equal Quantity of the same Water, it will smell of Sulphur, and cause a Precipitation with a fetid Smell.

A Gallon of this Water will yield about three hundred Grains of Sediment, which has a saline Taste, and will ferment with Oil of Vitriol, and emit an acid Fume. It will turn of a pale green with Syrup of Violets, and will crackle and fly when thrown on a red hot Iron. The Salt in Substance, rubbed with Oil of Vitriol, will excite a Fermentation, with an acid Fume; but it has little or no Fermentation with Spirit of Salt and Vinegar; when crytallized, the Crytals are of a cubical Figure. The Proportion of earthy Matter is as 66 to 440, which will ferment with Spirit of Salt, but not with Vinegar, and turn green with Syrup of Violets.

This Water purges strongly by Stool and Urine, and the common People will drink from three to eight Quarts, and then it will work briskly upwards and downwards. It is of great Use in bad Digestions, Loss of Appetite, and the Scurvy; and some take it to be a Specific in Ring-worms and Tetters. It is also of Use in habitual Costiveness, the Stone, Gravel, Cachexy, and a Stufing of the Mesentery, provided it is not attended with a Consumption. Some have been cured of the Jaundice by this Water, and others of a Quartan Ague; but in the Longing of young Women to eat incongruous Things, it is accounted a Specific; besides which, it has brought away prodigious Quantities of Worms.

Of ST. ERASMUS'S WELL in Staffordshire.

THIS Well is seated in the Grounds belonging to the Lord *Chetwynd*, near *Ingestre*, two Miles from *Stafford*. This Water was formerly in

n great Repute for curing both external and internal Diseases; it is clear and of the Colour of Sack; but has no remarkable Taste or Smell. It will lather with Soap, but will not curdle with Milk, and with Syrup of Violets it will turn to a Grass green.

Dr. *Plot* informs us, that upon the Distillation of three Pints of it in a Glass Body when about one half of it was come over, in clear Water, there plainly appeared to the naked Eye a prodigious Number of blueish shining Films, or Plates, floating therein.

A Gallon of this Water will yield three hundred Grains of Sediment, whereof two hundred and seventy-two were Sea Salt, and the rest Mofs, according to Dr. *Short*. From the various Experiments made with it, it appears to be impregnated with a Kind of calcarious Nitre and Sea Salt; but whether it is now made use of at all, or for what Purposes, it does not appear; but this is certain, that in Dr. *Plot's* Time, it lay wholly neglected, and overgrown with Weeds.

Of CAERGYRLE WATER *in* North Wales.

CAERGYRLE is in *Flintshire*, about seven or eight Miles South by West of *Chester*, and the Water of the Spring is as clear as Crystal. It has lately been much made Use of as a Purge, according to Dr. *Short*; and it will turn whitish with Oil of Tartar, white with Sugar of Lead, and lets fall a white Sediment with the Solution of Silver; it also turns Green with the Syrup of Violets, and red with Logwood. A Gallon of this Water will yield two hundred and twenty

Grains of Sediment, of which sixty-fix are Earth, and one hundred and fifty-four Sea Salt and Lime-stone, From the various Experiments made therewith, it appears to be impregnated with calcarious Nitre and Sea Salt, and if drank to a Quart or two, it purges pretty well ; but it will cause griping at first, and will produce Sickness at the Stomach for some Days, after which the Appetite becomes good. It has cured a Woman that had a loathsome Scurf all over her Body, by drinking three Pints of this Water in a Day ; and another, that was troubled with a scorbutic Disorder, was perfectly cured in a Week's Time, by drinking a Quart Morning and Night. Likewise several Children, afflicted with scorbutic Disorders, and the Leprosy, have recovered by drinking and washing ; or at least have been much better.

Of STRETHAM WATER in Surry.

STRETHAM is a Village in the County of *Surry*, six Miles South of *London*, and four North of *Croydon*. It has been long remarkable for its medicinal Springs, which were formerly much frequented, at least since the Year 1671. They rise out of a cold, rushy, clayey Ground, and are without Smell, especially when carried to distant Places ; for *Allen* affirms they have a sweetish Smell upon the Spot. The Water has something of a yellowish Tinge, and throws up a Scum variegated with Copper, Blue, and Green Colours.

This Water has something of a brackish Taste, when it has been boiled for some Time ; but at
the

the Spring Head it has a maukish Taste, or rather one that is saline and nauseous.

A Gallon of this Water yields about two hundred Grains of Sediment, that has a brackish pungent Taste, with very little Bitterness. The Salt has a penetrating brackish Taste, with a strong Flavour, and in the Air it becomes almost liquid.

From the various Experiments made with this Water, it appears to be impregnated with a Salt, which is partly marine and partly nitrous, that is enveloped with a little Sulphur, and a greater Proportion of absorbent Earth. When it was most in Vogue, three Pints of it were boiled to a Pint and a Half, and given as a Purge; it operates both by Stool and Urine, and some affirm, it works more briskly than *Epsom* Water; however, others are of a contrary Opinion. It has been found useful in Disorders of the Eyes.

Of the PURGING WATER of the Dog and Duck.

THE *Dog and Duck* is a noted Public House in *St. George's* Fields, in the Parish of *Lambeth*; and the new Road to *Deptford* runs close by it. The Fields about it are flat and level, and the Soil pretty deep; below which there is Gravel, and a Bed of Clay, intermixed with Pyrites. It being so near *London*, it is greatly resorted to, especially in the Spring and Summer, and there has been lately a large Room built, for the Diversion and Entertainment of the Drinkers.

The Water is clear, and has very little Taste, but it will let fall a white Sediment with a Solution of Salt of Tartar, and likewise with Spirit of Sal Ammoniac. It will curdle with Soap, and
with

with the Solution of Silver will let fall a white Sediment, after standing forty-eight Hours; with a Solution of Lead it will turn of a Pearl Colour, with a small Sediment; and it will turn whitish, and precipitate a grumous Sediment with the Solution of Alum. It will ferment considerably with Oil of Vitriol, and a little with Spirit of Salt. Beef steeped in it twenty-four Hours, and then boiled, becomes red within.

While this Water was evaporating, there appeared but little Whiteness on the Sides of the Pan; but there was a Scum on the Surface, and it acquired little or no Bitterness by the Exhalations of the aqueous Parts. According to the Experiment of Dr. *Fothergill*, a Gallon of this Water yielded two hundred Grains of Sediment, and Dr. *Rutty* tells us he gained ninety-six therefrom, which is of a dirty Colour, and has a pungent brackish Taste; it will grow damp in the Air, will ferment with Vinegar, and very much with Oil of Vitriol, emitting an acid Fume.

The Salt of this Water partakes less of an Acid than many other Waters of the same Class, and the earthy Matter is as one to twelve in Proportion to the Salt; it will ferment strongly with Spirit of Salt and Spirit of Vitriol; but will not turn to perfect Lime by Calcination.

Some Authors inform us, that this Water has been found effectual in the Cure of leprous Disorders; and Dr. *Baynard* tells us, that it had cured an ulcerated Cancer in the breast by drinking the Water, and keeping a wet Cloth always over it. Dr. *Fothergill* acquaints us, that it seems to have nothing volatile in its Composition, because it will operate as well, after keeping several Weeks, as when drank fresh at the Spring. Being drank,
from

from one Pint to three, it generally purges easily and briskly, and without affecting the Strength, unless in very tender Constitutions. Children, and those who cannot bear a large Dose, may have it boiled to one half. It may be taken as an Alterative instead of common Drink; for it has acquired a great Reputation for the Cure of scorbutic Pimples, Tetters, and the Leprosy, as well as the King's Evil, or at least they have been often relieved by it. It is also a palliative Cure in cancerous Disorders, for it has been the Means of prolonging the Lives of some with Comfort. When there is a Tendency to this Disease, this Water has retarded its Approaches. They do no Harm to any, except Persons advanced in Years, and especially free Livers; for in these Cases they cool too much, and bring on watery Swellings; they are also prejudicial to Persons of a weak Habit of Body, though attended with Eruptions, and to Women particularly, by bringing on the Fluor Albus.

Of D U L W I C H W A T E R.

THIS Water has the Name of *Dulwich*, because it rises in the Hills nearly adjoining to that Village; but in Reality it is in the Parish of *Lewisham* in the County of *Kent*; whereas *Dulwich* is in *Surry*. It used formerly to be frequented by Pigeons, which is an Argument that it is a saline Water; for these Birds are very fond of Salt.

This Water is generally clear, and has a brackish Taste, with a little Bitterness in the Throat, and it will curdle with Soap; but with Oil of Tartar

Tartar it will let fall a white grumous Sediment, and a thin Cruft on the Sides of the Glafs. A Gallon will yield three Drams of Sediment, of a greyish Colour and a brackish Taste, with somewhat of a Bitterness. It will ferment greatly with Oil of Vitriol, and emit an acid Fume like common Salt.

From these and other Experiments it appears, that this Water is chiefly impregnated with Sea Salt, calcarious Nitre, and a little calcarious Earth, though in a very moderate Proportion. It is accounted a brisk Purge, and somewhat rougher than *Epsom* Water. It has cured a Horse over-run with the Farcy, who was washed therewith, and constrained to drink it, by being kept from all other Water. Dr. *Peters* affirms, it was used at first to cure venereal Ulcers, by washing with it, and taking it inwardly; he also affirms, it cures old Ulcers by bathing the Parts, and that it dissolves Swellings, and cures the Leprosy, Itch, Scabs, Pimples, and Ring-Worms by external Use. It has been found to be good in Obstructions of the Liver, Spleen, and other Viscera; in the Green Sickness, black and yellow Jaundice, the Cholic, Gravel, Piles, Cachexy, Scurvy, and removes Difficulty and Sharpness of Urine. It is said to be serviceable in the Gout, to strengthen the Stomach, and to create a good Digestion. It strengthens the Brain and Nerves, prevents or cures the Apoplexy, Palsy, Epilepsy, Dizziness, and Pain in the Head, in which last Cases it should be taken warm. The Course of drinking should continue twenty Days, and three Pints a Day should be drank at first, and should be increased half a Pint in a Day, till eight or nine Pints be taken on the tenth Day; and then

it

it should be decreased again in the same Manner; but all this is affirmed upon the Credit of Dr. *Peters*.

In 1740, there was a new Spring discovered in the Village of *Dulwich* itself, which is about five Miles South of *London*, and has a College erected there called, *The College of God's Gift*, by *William Allen*, a Player, in the Time of Queen *Elizabeth*. The Water has a strong sulphureous Smell, after it has been covered for some Time, and it will not lather with Soap; but with Oil of Tartar it will let fall a copious white Sediment. When drank at the Well, five half Pint Glasses will purge briskly, and does not sink but raises the Spirits; it is also found to be very diuretic, and, in short, it seems to be of the same Nature with the old Spring.

Of WEST ASHTON WATER in Wiltshire.

WEST ASHTON is a Hamlet in the Parish of *Steeple Ashton* in *Wiltshire*, and is four Miles East of *Trowbridge*, five Miles South-east of *Holt*, and twelve South-east of *Bath*. The Spring is plentiful all the Year round, in which Case it is preferable to *Holt*, because the Water of that Spring diminishes at a certain Time of the Year; and it being much of the same Nature as *Holt*, it may be made Use of when there is a Scarcity of that Water.

The Water is clear, and will deposit but a small Quantity of Sediment, after keeping several Months in Bottles. It has almost an imperceptible Bitterness in the Throat, and an obscure Brackishness, unless a great Part of it be evaporated,

rated, and then it becomes evidently salt, and very bitter. It will curdle with Soap, and lets fall a white grumous Sediment with the Solution of Pot Ashes, as well as with the Spirit of Sal Ammoniac, and there will be in both crusty Adhesions to the Side of the Glafs. The Solution of Sugar of Lead will precipitate a small white Cloud of Sediment, and the Solution of Silver will cause it to let fall partly a white and partly a blackish grumous Sediment. It continues clear with the Solution of Alum, and Lime Water precipitates a subtle white Substance to the Sides and Bottom of the Glafs, and it will ferment a little with Spirit of Vitriol.

A Gallon of this Water will yield, after Evaporation, two Drams and two Scruples of a white Sediment, with a saline bitter Taste, and Warmness on the Tongue. The Proportion of Salt to the earthy Parts is a Grain and a Half to fifteen Grains, and the former will melt on red hot Iron. The earthy Part is partly absorbent and partly talky; there is a calcarious Substance, because it acquires the Taste of Lime upon Calcination. Hence it appears that this Water is chiefly impregnated with Sea Salt and Nitre, as well as a little Iron; but this last has no Efficacy, except at the Fountain Head; it has also a small Matter of Sulphur. A Quantity of about three Pints is purging and diuretic, and is best drank at the Spot.

Of STANGER WATER in Cumberland.

STANGER is a Village in *Cumberland*, two Miles South of *Cockermouth*, and three West of *Keswick*, and has a Spring of a clear saltish Water,

ter, with the Taste and Smell of Iron; it turns white with Spirit of Hartshorn, and lets fall a great Sediment with Oil of Tartar, as well as a white one with Solution of Silver.

A Gallon of this Water will yield 1170 Grains of Sediment, whereof 1080 were Sea Salt, and the rest Lime-stone; it is of a white Colour, hot on the Tongue, and grows very moist in damp Air. It will ferment and emit a very acid Fume with Oil of Vitriol; but not at all with Spirit of Salt or Vinegar. The Salt will crackle and fly when thrown on a red hot Iron, and will dissolve in about four Times its Weight of distilled Water.

It has been concluded, from some Experiments, that there's a little Mixture of Nitre with the Sea Salt; but this last predominates, and is joined to a considerable Quantity of Iron. Dr. *Short* informs us, that four or five Pints will purge upwards and downwards, and that it is an excellent Remedy in Surfeits, Pains of the Stomach, the Green Sicknefs, the Scurvy, and Sores, Pains of the Breast, and Breakings out of the Skin.

Of CAWTHORP WATER in Lincolnshire.

CAWTHORP is a Village in *Lincolnshire*, two Miles North of *Bourn*, and seven North-east of *Stamford*, and the Spring rises up into a large Basen in the Middle of the Street. It will turn very White with Oil of Tartar, and afterwards let fall a yellow Sediment; but it will turn Green with Spirit of Hartshorn. Six Pints, after Evaporation, left six Scruples of a very white Sediment, whereof fifty-four Grains were Salt, and sixty-six Earth, which fermented, hissed, and smoked

smoked with Spirit of Vitriol; and yet the Loadstone affected it greatly after Calcination. The Crystals gained from this Water, are like those of Sea Salt, with some little Nitre, according to Dr. *Short*; but the Characteristic of the Water, according to Dr. *Rutty*, is a saline Chalybeate; but Dr. *Short* places it among the purging Chalybeates; however, it promises to be a more powerful Corrector of Acidities, than most other purging Waters, which have not so much absorbent Earth.

Of HARREGATE WATER.

THIS Water is supposed to be the strongest sulphureous Water in *Great Britain*; and it lies two Miles North-west of *Knareborough* in the *West Riding* of *Yorkshire*. It will curdle with Soap, according to Dr. *Short*, and will turn Milk white with Oil of Tartar and Spirit of Hartshorn; it will render Silver blackish, and turn black with the Solution of Silver and Sugar of Lead, and both will precipitate a black Sediment. It turns of a brownish Red with Tincture of Rhubarb, Red with *Brazil*, and of a pale Yellow with Logwood.

A Gallon of that commonly drank, for there are three Wells, contains two Ounces of pure Sea Salt, and near two Scruples of Earth; and therefore the predominating Salt must be undoubtedly marine.

The Virtues of this Water, according to Dr. *French* and Dr. *Neal*, if a warm Bath be made with it, discover themselves in curing Aches, and Bruises, Strains, Lameness, Weakness of the Back, Beginning of the Dropsy, paralytic Pains and Weakness; in dissolving hard Swellings, curing

ing old Ulcers, Scabs, Itch, the Scurvy, and Leprosy. This Water is also said to have great Power in easing the Hip-gout and Gout. Internally the Dose is from three to four Pints, and though it purges sharply, it raises the Spirits. It powerfully cleanses the Stomach and Intestines, and kills all Sorts of Worms; besides which, it will cure the cold Scurvy, and helps the Jaundice of many Years standing. It also cures Disorders of the Spleen, the Green Sickness, Cramp, the Head-ach, and the King's Evil.

Of MAUDSLEY WATER in Lancashire.

MAUDSLEY is a Village in *Lancashire*, which lies to the South of *Preston*, and is remarkable for a Spring nearly of the same Strength with that of *Harrogate*, it being impregnated with Salt and Sulphur. It was first taken Notice of from the great Flock of Pigeons which resorted thither to drink the Salt Water, and to pick up the granulated Salt in Summer.

This Water is of a blue Colour, as is also the Mud on its Borders; it has a brinish Taste, and a strong stinking Smell. It turns white with Oil of Vitriol and Spirit of Harshorn; and lets fall a brownish black Sediment with the Solution of Silver, as well as with Sugar of Lead; and tinges Silver of a Copper Colour immediately, according to Dr. *Short*.

A Gallon of this Water contains nine hundred and sixty Grains of Sediment, whereof thirty are calcarious Earth, and the rest Sea Salt; and, according to Dr. *Leigh*, an excellent Salt may be made with it. This Water has much the same

Virtues as the *Harrogate*, and it has been known to cure Diseases of the Skin and Ulcers.

Of CRICKLE SPA in Lancashire.

CRICKLE is a Village in *Lancashire*, seated a little Mile from *Broughton*, where there is a Spring of clear Water, with a strong fetid Smell. It will turn Silver black in a Minute; the Water itself turns black with the Solution of Silver, and likewise with Sugar of Lead. The Basen, and the Earth it runs over, are of a shining black, and yet it will turn Rags, Leaves, and Glass very white. There are three hundred and twenty Grains of Sediment in a Gallon, twelve of which are Earth, and the rest Sea Salt and Nitre, according to Dr. *Short*. The Crystals will grow moist in a Bottle; and when thrown upon a red hot Iron, will crackle and fly. It is a purging sulphureous Water, and Sea Salt is the predominating Principle.

Of BROUGHTON WATER in the West-Riding of Yorkshire.

THIS Water proceeds from a Spring on the Side of the Road that leads from *Skipton* in *Yorkshire* to *Coln* in *Lancashire*, the Village being in the Mid-way between those two Places. According to Dr. *Short* it is of a whitish Colour, and colder than common Water, as is observable in others of the sulphureous Kind. It turns Silver first of a Copper Colour, and then black; and it turns Copper perfectly black. It changes Leaves,
Moss,

Moss, and the like, to a Red Colour; but its Bason, and the Channel it runs in, are of a Raven black.

A Gallon contains four Drams of Sediment, the fourth Part of which is Earth, and the rest Sea Salt and Nitre.

This is a strongly sulphureous Water, and the predominating Salt is marine, though there is a little Mixture of Nitre; the Virtues are much like those of *Harrogate* Water, but weaker.

Of SHADWELL WATER.

SHADWELL Water is seated in *Sun Tavern Fields*, in the Parish of *St. Paul's*, *Shadwell*, and on a Hill about two Miles eastward of the Tower of *London*, and about half a Mile from the River *Thames*. It is of an Amber Colour, with a strongly acid and styptic Taste, for it will greatly corrugate the Lips and Palate; it ferments for some Time with Oil of Tartar and Spirit of Sal Ammoniac, and lets fall a large ochreous Sediment, especially with the first. It continues clear with the Solution of Alum and Lime Water, as also with the Solution of Copperas. The Solution of Silver precipitated a grumous white yellowish Sediment, and it will turn Silver of a Lead Colour in a few Minutes; it will turn a Copper Halfpenny a little Black, on the Surface, and it turned a Knife black, blue, and rusty.

A Gallon of it contains a white and yellowish Sediment, which weighs thirteen hundred and twenty Grains; that is, two Ounces and six Drams, of the Colour of *Ens Veneris*. This had a highly acid and austere Taste, and will ferment

both with Oil of Tartar and Spirit of Sal Ammoniac. The Salt separated from the Earth is as 6 to 1, and has the same Taste as above mentioned.

The predominant Salt of this Water is highly acid and evidently vitriolic, with a combination of Sulphur. This Water has been chiefly used externally, but if a Pint of it be drank at twice, that is half a Pint at a time, in the Space of an Hour, it will procure a gentle Vomiting, and two or three mild Stools. It has done a great deal of good in scorbutic and even leprous Cases; the drinking it will first throw out Pustules, which have been removed by bathing the Part affected. It is also said to be effectual in the Cure of the Itch, Scabs, Tetters, and a scald Head, as also the Farcy and Grease in Horses. Some say it has cured Fistulas, stubborn Ulcers in the Legs, and sore Eyes, by dipping Linnen Rags in the Water, and applying them to the Parts affected; some likewise affirm it has cured scrophulous Ulcers. The internal Use has stopped inward Bleeding, and has perfected the Recovery of those who have had Camp Dysenteries; it is also good in Gleets and the Fluor Albus, and has done great Service in the Jaundice.

Of WESTWOOD WATERS in Derbyshire.

THE Village of *Westwood* is near *Tanderfley*, and its Spring is probably a Solution of the Pyrites, which is generally a concomitant of Pit Coal; this is rendered probable by the Waters turning Blue with Galls instead of Purple. After the Water is evaporated, the Salt separated from the

the Earth, and set to crySTALLIZE, it will shoot into beautiful CrySTALS of mature Vitriol without any other Salt. They will soon turn Milk into a fine clear Syllabub if squirted into it while new. This Water has been observed to cure stubborn chronic Ulcers, particularly in a Maid Servant, who had a most frightful Ulcer in her Leg for five Years, which was most prodigiously swelled, livid, and useless. She washed it twice a Day with this Water, and was cured in three Months, according to Dr. Short.

Of H A I G H W A T E R in Lancashire.

H A I G H is a Village, in *West Darby* Hundred, not far from *Wigan*, where there is a handsome Seat of the *Bradshaighs*, which is thought to be one of the best Situations in the North of *England*; and in the Park there is a Mount, from the Top of which may be seen thirteen Counties, and the *Isle of Man*. In this Lordship there are the fairest Kennel Coals in *England*, besides a mineral vitriolic Spring.

Dr. Leigh affirms that it will produce a great Fermentation with any Alkali, from which proceeds a neutral Salt like Tartar vitriolic. It will turn inky with Galls, even after it has been exposed to the open Air. When this Water is distilled it preserves the Taste of Vitriol, and becomes inky with Galls as before.

A Gallon of this Water yielded four Ounces of Sediment when it was first tried, but of late not so much; it consists of a Variation of white and green, with Oker, Sulphur, and a little Copper. The Operation of this Water is mild,

though it works plentifully by Vomit and Stool; but what is most remarkable, it will stop any internal Bleeding, according to Dr. *Leigh*, better than any artificial Preparation whatever.

Of the WATER near SWANSEY in North Wales.

SWANSEY is a Sea Port Town in *Glamorganshire* in *North Wales*, and is seated on the River *Fawye*, near its Influx into the Sea, and is called *Aber-Taw* by the *Welsh*. It is a large well built Town, and is five Furlongs in length by the River Side. It drives on the greatest Trade of any in the County, especially for Coals, and has a great Correspondence with *Bristol*. The Spring is not far from this Town, and has an acid styptic Taste like Alum, though the predominant Salt is a martial Vitriol. It will produce an ochreous Cloud and Precipitation with an Alkali, which may be destroyed, and the Water in a great Measure restored to its Transparency, by adding a little Oil of Vitriol. It turns blue with Vinegar, and will not curdle an equal Part of Milk. All styptic Drugs turn blue and brackish with it, and Green Tea changes to a dun Colour.

A Blade of a Knife immersed in it, becomes rusty in an Hour's Time, with a Mixture of a high red Copper Colour; Silver and Copper immersed in it for a Night, turned the Silver to a leaden Colour, but did not alter the Copper.

A Gallon of this Water yields forty Grains of Sediment, of a highly acid, styptic, vitriolic Taste, and of a light brown Colour; this will ferment with Spirit of Hartshorn and Oil of Tartar, and
sparkle

sparkle a little on a red hot Iron. We know little of its Virtues by Experience, only that it will stop Looseness, and staunch Blood externally in Wounds.

Of NEVIL-HOLT WATER in Leicestershire.

N*evil-Holt* is a Village in *Leicestershire*, to the South of *Market Harborough*, and to the North of *Uppingham* in *Leicestershire*. In digging up a Hill in Search of the Spring, there was found in the Clay, through which the Water was percolated, great Quantities of Talc, some of which being powdered, from half an Ounce to an Ounce was given in warm Ale, and was found an excellent Remedy in obstinate Loosenesses. The Earth about it abounds with Nitre, and the greatest Part of the Mountain near the Spring, is chiefly Lime Stone, but there is a good deal of Iron Stone.

The Water abounds with Salt, and yet it is not tinged brown; for they are not vitriolic, but of another Kind.

The Water is exceeding fine and clear, and has a styptic, bitter, sweetish, and sub-acid Taste, leaving the Mouth somewhat dry. It is uncommonly brisk and sharp, and agrees well with the Stomach, when drank at the Spring Head, and passes quicker out of the Body than elsewhere. Carried to some Distance from the Spring, or rather two or three Months after a Cask has been filled with it, it will have a fetid sulphureous Smell, which may be remedied by making it scalding hot, and without hurting its other Qualities.

It curdles with Soap, lets fall a gross white Sediment with Oil of Tartar, but less with Spirit of Sal Ammoniac, with which last it will not ferment. With the Solution of Silver it turns of a blueish Pearl Colour, and precipitates a thick yellowish white Cloud and Sediment; but with the Solution of Sugar of Lead it will turn milky, and give a small white Sediment. It will show a white Cloud, which will after fall down to the Bottom; but with the Solution of Allum and Copperas it will continue clear; hence it appears to contain a calcarious Nitre and Allum, with a fat Clay or Bole, a latent Sulphur, and sometimes a little Oker, as is confirmed by other Experiments.

This Water used externally is a speedy Cure for fresh Wounds, and quickly dries up the proud Flesh in old Wounds. Used outwardly and taken inwardly, it will cure hectic Ulcers, and is excellent for the Eyes, in obstinate Inflammations, Ulcers, and Diseases from Relaxations. When taken inwardly as an Alterative, it must be given in small Doses, that is, an Ounce or two at a time, five or six times in a Day; or four Ounces Night and Morning, and sometimes half a Pint or a Pint. Thus it may be given to Children, or to Women with Child, or in Child-bed; in these Cases the Dose is from one Ounce to three, and may be increased to five; four, five, or six times a Day. When it is designed to purge, it must be taken from one Pint to three, and it will work without griping; however, in delicate Patients, when drank in a large Quantity, it is apt to cause Vomiting; but it may be rendered grateful to a weak Stomach, by adding two or three Ounces of Syrup of Raspberries to every Quart,

or

or three or four Ounces of strong Cinnamon Water to a Pint. If the Constitution is cold and phlegmatic, it will be necessary to add four Spoonfulls of Brandy, and an Ounce of Sugar to each Bottle of Water, to warm it and take off the disagreeable Taste. It works powerfully by Urine, and sometimes by sweat, for which Reasons it is excellent in bloated dropfical Constitutions. Dr. *Short* affirms it has no Parallel in Bloody Urine, the Bloody Flux, Vomiting and Spitting of Blood, as well as other Hæmorrhages, and the Fluor Albus; it restrains most preternatural Secretions; and it is of greater Virtue in the Diabetes than any other Mineral Water, because it purges and binds at the same time, and will do more in a Month than others will do in a Year. It will also cure the Relics of the Venereal Disease, when imperfectly cured by Mercurials. It is also excellent against Gleets and other Disorders of the same Kind; but in Hæctics, attended with spitting of Blood, its Effects are surprising; and it has even been successful when attended with Shortness of Breath. It also cures an Inflammation of the Lungs, attended with a Cough and spitting of Blood, when Universals have been premised. There is something very remarkable in this Water; for it is an Astringent, and effectually restrains uterine and other Hæmorrhages, it does not cause any Obstructions, but keeps every thing in a natural Order. It is good in all excessive Relaxations in general, and particularly in a Proneness to Miscarriage, either from a Laxity or a Plethora, in which it has hardly failed in a single Instance; the Dose for this Purpose is a Pint in a Day. It has been given with wonderful Success in the King's Evil, and hidden Cancers

Cancers, as well as in scrophulous Inflammations of the Eyes of many Years standing ; for it never fails if the Bones are not rotten. It also succeeds in scorbutic Pustules, leprous Disorders, old Ulcers in the Legs, and scorbutic Atrophies. It has also been found of great Service in hystERIC Disorders, in Want of Appetite, in the Worms, Stone, Gravel and Strangury ; and we have one Instance of its curing an Ulcer in the Bladder. It has also had surprizing Success in curing Rheumatisms ; but when the Pain is attended with a Fever, it is best taken as a Posset, made with three Parts of the Water and one of boiled Milk.

But this Water must not be drank in the Increase and Height of Quinsies, Pleurifies, and Inflammations of the Lungs, nor yet in any Disorders of the Breast, where a plentiful and easy Expectoration is required ; nor is it good in Inflammations of the Stomach and Liver, nor in any Suppression of the usual Evacuations, nor in large Stones lodged in the urinary Passage ; to these may be added a colliquative Looseness in the last Stage of a Consumption, in a too rigid State of the Solids, and lastly where there is a manifest Acidity of the Humours.

The Salt of this Water, according to Doctor Short, has a singular Efficacy in preserving the Blood and Bile from Putrefaction ; besides which it will restore those Juices to Sweetness when they are quite putrefied. As it ouzes out of the Summit of a dry Hill, and only drops, it is impossible for any other Spring or Water to be let into, or mix with it.

* * * This Water is sent up to Mr. Owen's Original Water Warehouse in *Fleet Street, London*, under Dr. Short's Directions : All the Other Waters are likewise sent to him under the Directions of the several Physicians.

Of ILMINGTON WATER in Warwickshire.

Ilmington is a Village in *Warwickshire*, three Miles North-west of *Shipton*, and seven South of *Stratford upon Avon*; and the Water found here, according to Dr. *Derham*, is paler than Rock Spring Water, has a brackish Taste, and is one of the strongest Chalybeates in *England*. At the Spring Head it sparkles like bottled Cyder; and in a very dry Season is near half a Dram in a Pint heavier than common Water; it will not turn Milk, but with Oil of Tartar there is a small Coagulum. It will turn Purple with Galls, and when more Galls are added to it will become black; but with Syrup of Violets it changes to Green.

The distilled Water is insipid, and will not change its Colour with Galls; a Quart of the Water in its natural State will yield near a Spoonful of a reddish white Powder, that will ferment and fume with Acids. Those that drink this Water have their Stools tinged blackish, and when drank in large Quantities will cause a Giddiness. Its Operation is generally by Urine, though it will sometimes purge; externally it will cure old running Sores, if they are washed therewith; internally it is good in the Scurvy, where an Acid prevails; in Obstructions of the Spleen and Liver, and in the Jaundice and Beginning of Dropsies; it is also good in the Gravel, Strangury, and Difficulty of making Water.

Of HAMPSTEAD WATER.

IT is generally known that *Hampstead* is a large Village, five Miles North of *London*, which is greatly frequented by polite Company in the Summer Season. The Water that is found here was formerly in as great Reputation as that of *Tunbridge*; and perhaps now deserves to be as much made Use of. It is transparent, has a strong ferruginous Taste, and is better in the Morning than in the middle of the Day; but in hard frosty Weather it is prodigiously strong. When this Water is bottled, it will hold it Spirit and Virtue a considerable Time, and may be carried to distant Parts. It lathers with Soap, but does not change with Spirit of Hartshorn, or of Sal Ammoniac; and yet it will ferment with Oil of Vitriol, grow warm and smoke. It will keep Milk sweet for four Days, and it will turn Purple with Syrup of Violets. Half a Grain of Galls grated, will turn it to a fine deep Purple; in another Experiment, a Grain of fresh powdered Galls turned a Pint of this Water Crimson, and so continued for four or five Days. A Gallon yields about five or six Grains of a kind of saline Concretion, mixed with a yellowish Earth, in Taste somewhat like Vitriol of Steel.

This is not a purging Water, for it works most Part by Urine, and has been found good in Want of Appetite and Indigestion; in Vomitings and Colics, in nervous and hysterical Disorders; and it raises the Spirits greatly. It is serviceable in the Fluor Albus, in Weakness from Miscarriages, and in the Scurvy and all Diseases of the Skin.

Skin. It is also serviceable in Obstructions of the Bladder and Kidneys, from Sand, Gravel, and small Stones; and lastly, it is good in Obstructions of the Mesentery, and even in some paralytic Disorders.

Of THETFORD WATER in Norfolk.

T*Hetford* is a Market Town in the County of *Norfolk*, and a Place of great Antiquity; but it is not so well inhabited as it was formerly. It is seated on the River *Ouse*, over which there is a Bridge that leads to *Suffolk*. The Water appears to have somewhat of Iron, for Galls will first turn it purple and then black. A Gallon of it will let fall, without any Mixture, a Dram of an earthy Substance, of the Colour of Oker, which being calcined in a Crucible, some of its Particles were attracted by the Loadstone. The okery Substance aforesaid, being rubbed with Mercury, and then placed over the Fire in a Crucible, became Black like Ethiops Mineral; the same Mixture being distilled in a Retort, yielded a Gas of Sulphur.

This Water seems to be impregnated with Iron, Sulphur, and Natron; and *Manning* affirms, that with the Juice of Lemons he precipitated a true Sulphur. It works gently by Stool and Urine, and sharpens the Appetite; it has cured Melancholy by drinking it six Weeks, and Pain of the Stomach and Bowels, with an hystERIC Disorder, Loss of Appetite and Strength in a few Months; as also a Pain of the Stomach, Worms, Fainting, Vomiting, Pains of the Head, Convulsions, Indigestion, Difficulty of Breathing, and the Beginning of a Consumption, in a Month.

Of

Of COBHAM WATER in Surry.

CObham, is a Village or Town, three Furlongs in length, seated on the Road between *London* and *Guildford*; it is seven Miles South-west of *Kingston*, ten Miles North-east of *Guildford*, and twenty South-west of *London*. The Water has a sensible Taste of Iron, though it is a very light Water, and it has this Property, with others of this kind, that three Drops of Oil of Sulphur, added to a Quart of the Water, will effectually preserve it two or three Months, will keep it fit to be drank at places remote from the Spring. A Gallon of it will yield seven Grains of a Substance like Oker, which was attracted by a Loadstone without Calcination; it will hardly ferment with Vinegar or Oil of Vitriol, though it emitted an acid Fume with the last. It is a strong Chalybeate, and if it was more known, would probably be full as much in request, as the Waters of *Tunbridge*.

Of LINCOMB WATER.

LIncomb or *Lincomb* Spa, is seated near *Bath* in *Somersetshire*, and we have an Account of it, published by Dr. *Hillary*, in 1742. The Water when first taken up, has a light brisk sulphureous Smell, which it loses in six or eight Minutes Time; but its Taste of Iron is more lasting, tho' it loses this when exposed eight Hours in an open Vessel. It is transparent at first, but on standing becomes of a pearl and blueish Colour, and throws up to the Surface, a thin variegated unctuous Scum. A Gallon of this Water after

Eva.

Evaporation, leaves from sixteen to twenty-four Grains of Sediment, of a pale cinnamon Colour, which will grow damp in the Air.

From various Experiments it appears, that this Water is chiefly impregnated, with Iron and a little Sulphur, or as some think with Bitumen, and a small Quantity of alkaline Salt. It fits light on the Stomach, to which it gives an agreeable Warmth, but makes the Heads giddy of those that are not used to drink it; it passes off quickly by Urine, and sometimes will purge a little at first; it mends the Appetite and raises the Spirits. Externally it cleanses and heals scrophulous Ulcers, as well as those that are old, dries up sharp Humours, and cures Eruptions and scurfy Foulnesses of the Skin. Internally it is serviceable in Disorders of the first Passages, such as Indigestion, Vomitings, Heart-burn, and sour Belching; it is also good in Cachexies, the Jaundice, and recent Obstructions of the Liver; it also deterges and heals Ulcers of the Kidneys, and frees them from Slime and Gravel. It is likewise effectual in removing the Strangury and Incontinency of Urine, attended with Heat and Pain.

Of CHIPPENHAM WATER in Wiltshire.

Chippenham is a Market Town in *Wiltshire*, seated on the River *Avon*, over which there is a Bridge of sixteen Arches. It is a good thoroughfare Town, and is twenty-one Miles east of *Bristol*, and ninety-four west of *London*. This Water was taken notice of in 1759, and was found in a Garden near the River. At the Spring-head, it has a brisk ferruginous Taste, and will turn of a Claret Colour with Galls. A Gallon will

will yield thirty-nine Grains of a Sediment of the Colour of Oker, and of a very brackish Taste.

It is a pretty strong Chalybeate, and has a strong Sea Salt, besides, as some think, a Natron combined with Iron. It has been chiefly hitherto remarkable for curing scorbutic Disorders; besides which it has cured other Disorders, and once a Consumption pretty far advanced.

Of the NEW TUNBRIDGE WELLS at Islington.

THE Spring is seated very near the *New River* Head, almost at the Entrance of *Islington* on the Side next *London*. It has a Taste of Iron, and is a little styptic, with some Degree of Quickness both in Smell and Taste, especially in Summer; it is apt to make some that drink it giddy or sleepy, which may be easily remedied by the Addition of a little pure common Water. It will lather with Soap, and will turn only a little milky with a large Proportion of Oil of Tartar; it will not let fall any Sediment with volatile Alcalies; but it will grow whitish and curdle a little with the Solution of Sugar of Lead; Oil of Vitriol dropped into it produces a Fermentation with Heat and Smoke; and Syrup of Violets changes it to Green. Galls at the Fountain Head turn it first of a light Crimson, which gradually changes to a reddish Purple, and at length to a muddy thick Black.

It is observable that a fat unctuous Matter, which is always a concomitant with Iron Ore, lines the Infides of the Glass used in drinking this Water, and it throws up a Copper coloured Scum. A Gallon of it has yielded from ten to thirty
Grains

Grains of a reddish Earth, at different Trials, which fermented with Oil of Vitriol. After a very exact Analysis of this Water, it appears to be a light and comparatively pure Chalybeate, of considerable Strength at the Fountain Head, where it ought to be drank.

It is said to be of great Efficacy in all nervous Disorders, and restores the Strength after it has been weakened by violent acute Diseases. It opens all Obstructions in Women, and is excellent in the Dropsy; in which Case the Dose is from half a Pint to a Pint and no more. It is a powerful Deobstruent in scrophulous and other glandular Obstructions, and is of some Service in reducing corpulent Habits.

Of ASTROP WELLS in Northamptonshire.

ASTROP is a Village in *Northamptonshire*, four Miles South-east of *Banbury* in *Oxfordshire*, and seven West-north-west of *Brackley*. The Wells that are found here were formerly greatly recommended by Dr. *Moreton*; and Dr. *Short* informs us, that the Water is a brisk, spirituous, clear, and well tasted Chalybeate; and just taken from the Fountain is much lighter than common Water. It lets fall a white Sediment with Oil of Tartar and Spirit of Hartshorn, and turns to a purplish pearl Colour with a Solution of Silver. A Gallon after Evaporation yields seventeen Grains of Sediment, containing Nitre and calcarious Earth.

This Water, when drank at the Fountain, is a light, brisk Chalybeate, and is found a certain Cure in all female Obstructions, and in the first

and second Stage of Consumptions ; it seldom fails in the Jaundice, and Beginning of a Dropsy ; and it restores a Constitution weakened by hard drinking ; it eases rheumatic Pains, and frees the Kidnies from Gravel. The worst of this Water is, the Largeness of the Dose ; for, from three Quarts to five must be drank in the Forenoon. Some have affirmed that thus taken, it will cure some sorts of Madness and Melancholy.

Of ROAD WATER in Wiltshire.

R O A D is a Village in *Wiltshire*, and on the Borders of *Somersetshire*, eight Miles North by East of *Bath*. It has a chalybeate and sulphureous Taste, and likewise a sulphureous Smell. A Gallon of this Water evaporated will yield near a Dram of a yellow coloured Sediment, that has a salt and pungent Taste, and will turn of a tawney Orange Colour with a Solution of Mercury Sublimate. An Ounce of the Sediment contains a Dram and an half of Salt, of a dark greyish Colour, and of a saltish lixivial Taste. It will dissolve in the Air ; and rubbed with Salt of Tartar, will produce a penetrating fetid Smell.

This Water appears to be impregnated with Iron, Sulphur, and a strong native Alkali or Natron. At first using it is a very gentle Purge, and is of Use in scrophulous Cases and Diseases of the Skin. A certain Person was cured by drinking the Water and washing the Sores therewith ; and another of strumous Disorders of the Eyes. Its good Effect in these last Cases has been found several times, as well as in scorbutic Ulcers.

Of BURNLY WATER in Lancashire.

THIS Water, with Galls, will turn to a deep red Colour in a Moment, and with Syrup of Violets it turns to a very deep green; a Gallon yields twenty three Grains of a yellowish Substance, which will melt in the Air like Salt of Tartar; it will ferment with any Acid, and has a strong lixivial Taste. It works powerfully by Urine, and sometimes by Stool, and has been found successful in scorbutic Cases.

Of HANBRIDGE WATER in Lancashire.

THIS Spring is seated between *Burnly*, a Market Town in *Lancashire*, and *Townly* a Village, which are not above two Miles asunder. *Burnly* is seated near the River *Colne*, and is twenty-one Miles East of *Preston*, and 204 North-west of *London*. This Water will change with Galls to a faint Orange Colour; *Leigh* affirms it will yield Natron in a greater Quantity than any Spring in those Parts; though *Dr. Short* calls it a Chalybeate. The Salt obtained from it will yield a fetid and penetrating Smell, when rubbed with Salt of Tartar. These two last Waters agree with the *Pouhon* at *Spa*, in containing Iron and Natron as the principal Ingredients. It purges by Stool and Urine, and is of great Use in the Gravel and Scurvy, in Obstructions, and in Diseases from an Acid.

Of WITHAM WATER in Essex.

WITHAM is an ancient Market Town, of four Furlongs in Length, and is a good Thoroughfare; it is seated on a Branch of the *Blackwater*, a River so called, and is thirteen Miles South-west of *Colchester*, eight North-east of *Chelmsford*, and thirty-seven North-east of *London*. The Water when fresh is perfectly clear, and has a very strong ferruginous Smell and Taste; when just taken up from the Spring it has a remarkable Freshness that renders it agreeable to the Taste and Stomach; but after it has stood some time, it loses this fine Quality, throws up a variegated Scum on the Surface, and deposits a brownish Sediment.

The yellowish brown Sediment that this Water deposits spontaneously, being put into Fusion with Salt of Tartar, gives a Tincture to rectified Spirit of Wine, and mixed therewith; but by Distillation it yields nothing but pure Water; and a Gallon of it evaporated, leaves thirty Grains of Sediment, which will grow damp in a moist Air, and being laid on a red hot Iron emits a faint blueish Flame, with the Smell of Sulphur.

From this and other Experiments it appears, that this Water is a Chalybeate of considerable Strength at the Fountain; and it is likewise sulphureous, with a Mixture of Sea Salt, Nitre, and calcarious Earth; but it is of no Use unless it be drank at the Spring, for the active Particles are soon lost. It is very diuretic, and has been used with great Success in hectic Fevers, in Weakness occasioned by a long Disease, in Lowness of Spirits,

Spirits, Weakness of the Nerves, Want of Appetite, Indigestion, and the habitual Colic and Vomiting; as also in Agues, in the Jaundice, and Beginning of a Dropsy. It is also of Service in the Gravel, in some sort of Asthmas and scorbutic Disorders.

Of TILBURY WATER in Essex.

TILBURY is a Village in the County of *Essex*, which is seated over against *Gravesend* in *Kent*, and is near two Miles North from *Tilbury Fort*. The Water here taken Notice of is situated near a Farm House, on the Top of a Hill, which is elevated 100 Feet above the marshy Ground, and it is about two Miles distant from the River *Thames*. It has something of a Straw Colour; and has a soft, smooth Taste, affecting the Tongue with a Sense of Fulness. It makes excellent Punch, and is extremely good for Tea, which it draws very well, and renders soft.

This Water with Oil of Tartar will cause no immediate Precipitation; and it will curdle with Soap though not with Milk; with a Solution of Alum it will ferment a little, and at the same time the Sides of the Glass will be covered with plenty of Bubbles. From the various Experiments that have been made with this Water, it appears to be a stronger Anti-acid and Absorbent than any common hard or purging Waters.

The Bubbling of this Water shows that it contains a considerable Quantity of Air; but the Bubbles are very small, and form themselves on the Sides of the Glass into which it is poured. When this Water has stood some time it throws

up a Scum, variegated with red, blue and green, which continues thereon until half of it is evaporated, and then it appears to be unctuous or greasy; and when dried on the Finger, discovers somewhat of a calcarious Nature, by its fermenting with Spirit of Vitriol.

A Gallon of this Water will yield about 180 Grains of Sediment, of a yellowish brown Colour, with a sharp urinous Taste, like that of a fixed Alkali.

After various Trials with different Substances, it appears that the Salts contained in this Water have most of the Properties of fixed Alkalies, except the great Acrimony. A Quart of it in a Day is a middling Dose, which generally passes off by Urine or Perspiration; it usually sits very easy on the Stomach, and gently warms it, strengthening the Appetite and promoting Digestion. It warms the Blood, and is good in Lowness of Spirits; but it often occasions a Tingling of the Skin. According to Dr. *Andre* it is as true a Specific in Loosenesses, as the Bark in intermitting Fevers. It also will cure the Bloody Flux, the Bleeding Piles, and other Evacuations of that Kind; it is likewise of Service in the Fluor Albus, the Gonorrhœa, Gravel, the Asthma, Acidity of the Stomach, and some Scurvies.

Of CLIFTON WATER in Oxfordshire.

CLIFTON is a Village two Miles East from *Deddington*, a Market Town in *Oxfordshire*. It is seated on a rising Ground, and is a pretty large Place, sixteen Miles North of *Oxford*, six and a half South of *Banbury*; but from *London* it is

is fixty-two. The Water is about a Furlong South of the Village, which is clear and has little Taste, according to Dr. *Short*. He also tells us, that it yields a peculiar Kind of Nitre, which *Rutty* takes to be a Kind of Alkali.

A Gallon of this Water will yield seventy-four Grains of Sediment, of which nine are Earth and sixty-five a peculiar Kind of Nitre ; besides which there is a little white Sand. It is a laxative Water, and has been much used for Diseases of the Skin in Cattle ; as also in Men by bathing therein.

Of GLASTONBURY WATER in Somersetshire.

Glastonbury or *Glastenbury*, is a Town in *Somersetshire*, but is chiefly taken Notice of for the Abbey, which appears by its Ruins to have been very magnificent ; and some pretend it had not its equal in the World. The Water is naturally sweet, and has no remarkable Contents ; and yet in the Year 1751, there were great Numbers of People resorted thither to drink it and bathe therein, in Consequence of a Dream of a certain Person, afflicted with an Asthma, who was cured by taking it. It is certainly destitute of those Virtues that the Multitude have ascribed thereto ; however Dr. *Clark* acknowledges, that it has relieved many that had scorbutic and scrophulous Habits, attended with Ulcers ; but then he believes that common Water will do as much. On the contrary we are told, that many, by their injudicious drinking this Water, instead of being cured, were hurried out of the World. Some of the Roman Catholics, who are very fond of Mi-

racles, believed the Virtue of this Water was owing to its passing over the Graves of holy Men ; but be this as it will, the Infatuation is now over, and it is generally thought to be no better than any other common Water.

Dr. *Rutty* has been at the Pains of analysing this Water, and from the Experiments he has made, he concludes that it contains a latent Sulphur, extricated by Putrefaction ; and then, that it contains a native Alkali or Natron ; for out of about thirty Grains of Sediment, which he obtained from a Gallon, he extracted a Salt of a bitterish Taste, which grew moist in the Air, and had a pungent Smell when rubbed with Sal Ammoniac.

Of WIGGLESWORTH WATER in Yorkshire.

Wigglesworth is a Village, seated in the Parish of *Long Preston* in the West Riding of *Yorkshire* ; and it is four Miles South of *Settle*, a Market Town in that County. The Spring is remarkable for yielding a Salt, which Dr. *Short* calls an alkaline Nitre. It is very black and has a strong Smell of Sulphur with a saltish Taste ; it lathers with Soap, and will not curdle Milk. It turns of a brownish Black with the Solution of Silver, after which it curdles, and lets fall a Sediment. It is always covered with a white Scum, and turns Leaves, Grass, Roots, and Sticks white.

When three Gallons of this Water have been evaporated, it left seven Drams of Sediment, of which six Scruples and a half were black Earth, and the rest Salt. The Salt extracted from it is of a dark brown Colour, with an urinous Flavour,

vour, and a brackish and bitterish Taste. The Solution of it continues clear with Oil of Tartar and Spirit of Sal Ammoniac, and Soap lathered with it after a little Curdling; both the Salt and its Solution will ferment strongly with most Acids; and being rubbed with Sal Ammoniac, will emit a pungent Smell.

Hence it appears to contain an alkaline Salt, and its Solution will turn Red with Rhubarb, of a deep Purple with Logwood, of a Crimson with *Brazil*, of an Olive with Ash-Bark and Galls, and of a deep Green with Sumach. A certain Author affirms, that the Salt being mixed with Sand, and thrown into a hot Crucible, it filled the Glass House with an intolerable Smell of Sulphur, and flamed furiously as soon as set in the Furnace; and the Sand soon melted, and became a fine Glass as black as Jet. The Country People, according to Dr. *Short*, drink four or five Pints of this Water as a Vomit, and six or seven as a Purge; but it seems strange, that more should be required for the latter than the former.

Of BILTON WATER in Yorkshire.

BILTON is a Village, a very little to the West of *Knareborough*, in the West Riding of *Yorkshire*, which Town is twenty-two Miles West of *York*, and 175 North by West of *London*. Dr. *Short* informs us, that the Water is strongly sulphureous, and will turn the Solution of Silver to the Colour of Strong Beer; which afterwards becomes white, and it throws down much white Sediment. *Rutty* thinks the Salt, when separated from the Earth, is an Alkali mixed with Sea Salt.

A Gallon

A Gallon will yield a Dram of Sediment, whereof one sixth Part is Earth. The Sediment is of a light brown Colour, with a brackish Taste, and it will ferment strongly with Vinegar, and turn immediately of a bright Green with Syrup of Violets; and if rubbed with Sal Ammoniac, it will emit somewhat of a pungent and urinous Smell. It appears from various Experiments, that *Bilton* Water is impregnated with Sulphur, and an Alkali mixed with Sea Salt, as well as a little calcarious Earth.

Of SUTTON BOG WATER.

THIS Water is seated in the Parish of *King's Sutton*, and almost close to that Village, which is four Miles South by East of *Banbury* in *Oxfordshire*; though the Village itself is in *Northamptonshire*. The Water has an intolerable strong Smell like rotten Eggs, but the Taste is saltish, warm, and pungent, like Salt of Tartar; this like many other saltish Springs is very much frequented by Pigeons. It turns Silver of a deep reddish Copper Colour in thirty Minutes.

This Spring is covered with a blue Scum, but the Mud is of a jet Black. A Gallon of the Water being evaporated, sometimes yields 166 Grains of Sediment, of which nine are Earth or Clay, and the rest a Salt, of a brownish yellow Colour, and of a pungent, brackish, and bitter Taste. This Salt dissolved has a lixivial nauseously bitter Taste, and continues clear with Oil of Tartar and Spirit of Sal Ammoniac. In Substance it ferments greatly with Oil of Vitriol, with Spirit of Salt and with Vinegar; and it
instantly

instantly turns to a bright green with Syrup of Violets; it short, it has all the Characteristics of an Alkali, and the Water is strongly impregnated with Sulphur and an alkaline Salt, mixed with Sea Salt. In general it is a purging Water, and is used both for drinking and bathing, and washing; besides which the Mud is not without its Virtues. It is famous for discussing and healing of Tumors, Ulcers, and all Diseases of the Skin.

Of CHADLINGTON WATER in Oxfordshire.

CHadlington is a Village in *Oxfordshire*, three Miles South of *Chipping-Norton*, and sixteen North-west of *Oxford*; the Water has a saltish Taste, and smells like the Washing of a foul Gun. It turns Milk white with Sugar of Lead, of a willow Green with Syrup of Violets, and of a Pink Colour with Logwood, according to Dr. *Short*.

A Gallon of this Water evaporated yielded ninety Grains of Sediment, of which seventeen were Earth, and the rest of a peculiar Sort of Nitre, according to the abovementioned Author. Dr. *Rutty* made several Experiments therewith, from whence he concluded, that this Water is impregnated with Sulphur, and an alkaline Salt mixed with Sea Salt. As to its Virtue, it is accounted a purging Water, which is all the Account we have of it at present.

*Of the WATER of QUEEN'S CAMEL in
Somersetshire.*

Queen's Camel is a Village in *Somersetshire*, five Miles North of *Sherborne*, and twenty-six South of *Bath*. The Spring proceeds from a hard rocky Bank, and is called the *Black Well*; the Water is cold, and has a fetid Smell and Taste like the Washing of a foul Gun. A Gallon of this Water after Evaporation leaves sixty-four Grains of a whitish Sediment, of a very brackish and urinous Taste, which being rubbed with Sal Ammoniac, smelleth strongly pungent and urinous, and a little pungent with Salt of Tartar; but being rubbed with Syrup of Violets, it quickly turned of a Grass Green.

From the Trials that were made with it, it appeared to contain a considerable Quantity of Sulphur, some Natron, and a calcarious Earth. Doctor *Rutty* is of Opinion, that the Natron is combined with Sea Salt. It has been used with good Success both inwardly and outwardly; and here is a particular Place contrived for bathing in, in order to cure scorbutic, leprous and scrophulous Disorders. It cures dogs of the Mange by dipping them therein. It purges very little or nothing, but it might be applied to various good Purposes, if directed by a skilful Physician.

Of the DROPPING WELL at Knaresborough in Yorkshire.

THE Situation of *Knaresborough* has been already taken Notice of, and therefore needs not be repeated; the Spring rises near this Town, about fourteen Yards below the Top of a small Mountain of Marly-stone, or Lime-stone, according to Dr. *Short*. It is to the West of the Town, and about twenty-six Yards from the Bank of the River *Nid*; it runs in a very small, clear Channel, into a spongy Rock about twelve Yards long, which hangs on the Edge of another stony Rock, and there diffuses itself, and distils through the Pores of the spongy Rock, like a plentiful Rain on the Ground below, which is all become a solid Rock, and within, if a Stick, Leaf, or Moss lie for some Time, it crusts them over with a thick Matter, which in Time becomes a Sort of Stone like Lime-stone, but clearer and smoother; from thence it runs into the River *Nid* about twelve Yards off, where this Water has made a Rock that advances some Yards into the River. There's no Appearance of any petrifying Quality in the Spring till it reaches the Rock; if Moss or Wood be thrown into it, it will not petrify, or at least but very little.

The Water itself is very cold, extremely limpid and sweet, but it is twenty-four Grains in a Pint heavier than common Water. It curdles with Soap, turns white, and lets fall a white Sediment with Oil of Tartar; it turns very white, thick, and curdles, letting fall a large white Sediment with the Solution of Sugar of Lead; but

it will not precipitate any Thing, nor grow blackish with the Solution of Silver. It turns Galls, Green Tea, and red Roses green in three or four Days time; but it changes Tincture of Rhubarb to a fine yellow Colour, and the Tincture of Logwood reddish.

The petrifying Particles consist chiefly of Spar, and some Sulphur; and a Gallon of the Water, that fell from the petrifying Rock, after Evaporation, left an hundred and eighty-five Grains of Sediment, of which seven Scruples and four Grains left five Scruples and four Grains of Earth, which would ferment with Acids, and two Scruples of Salt, all of which shot into nitrous Crystals; which shows that the saline Matter contained in the Sediment is truly a calcarious Nitre.

This Water is found effectual in curing inveterate Fluxes of the Belly, bloody Fluxes, Lienteries, and the Diabetes. It is strongly recommended in all preternatural Discharges of Blood, and in profuse colliquative Sweatings, as well as Ulcers of the Viscera, hectic Fevers, and wasting of the Flesh. The Use of this Water is always to be preceded with a Dose or two of Rhubarb, and three half Pints of it are always sufficient for a Morning Dose, according to Dr. Short.

*Of the WATER of BALL, or BANWELL, in
Lincolnshire.*

THIS Water is in the Parish of *Stenfield*, or *Stanfield*, ten Miles East of *Lincoln*, and the Water, like the former, is very pleasant and sweet; but it will curdle with Soap, becomes of a pearl Colour with Oil of Tartar, afterwards cloudy,

cloudy, and in a few Days lets fall much Sediment. It ferments pretty much with acid Spirits, turns green with Syrup of Violets, of a fine deep Red with Tincture of Logwood, and with Tincture of Galls first white, and then green. A Gallon of the Water, after Evaporation, leaves four Scruples of a white Sediment, forty-four Grains of which are Earth, thirty Nitre, and eight Sea Salt. It is recommended in the same Cases as *Knareſborough* dropping Well; but the Dose must be five half Pints in a Morning, according to Dr. *Short*.

Of NEWTON DALE WATER *in the North-Riding of Yorkshire.*

*N*ewton Dale is seated in the *North-Riding* of *Yorkshire*, twelve Miles West by North of *Whitby*, and forty Miles North of *York*. The Water is cold, and very astringent, and its Stream is much more rapid than that of *Knareſborough* Dropping Well. It petrifies every thing in its Course, and produces various and beautiful Incrustations and Figures. It effectually cures Loosenesses, and Bleedings of any Kind, both in Man and Beast, and it quickly and wonderfully restores weakened Joints, that are even beginning to be distorted, by bathing therein, according to Dr. *Short*.

Of the OILY WELL near Edinburgh.

IN the Parish of *Libberton*, two Miles South of *Edinburgh*, there is a Well in the Parish of *St. Catharine*, commonly called the Oily Well, because at the Bottom there remains a great Quantity of black Oil, according to *Mac Kile*. It has a Smell like the Smoke of Coals, and is like the Oil extracted from thence, by some called the *British Oil*, only it is not quite so strong. It is of the Consistence of a moderately thick Balsam, of a black and yellowish Colour, and of a Taste and Smell nearly like that of *Barbadoes Tar*; it dissolves in Oil of Olives, but not in rectified Spirit of Wine, nor yet did it impart any Tincture to the Spirit after a Month's Digestion, nor is the Water itself much affected with the Taste of the Oil, because it will not dissolve in Water.

This Oil will suddenly heal Scabs, and many Disorders of the Skin, as well as aching of the Bones; it is also good in the Palsy, and Pains from a cold Cause, and will add Strength to weak Limbs if often anointed therewith warm; in short, it has the same Virtues as Oil of Coals.

Of PITCHFORD WELL in Shropshire.

P*itchford* is a Village six Miles South by East of *Shrewsbury*, and takes its Name from its pitchy Spring that is found here, on the Top of which there floats a liquid Bitumen, though it is scummed off every Day; and over most of the Coal-pits hereabouts there lies a Stratum of a blackish

blackish Rock, out of which, by boiling and grinding, they obtain a Kind of a Pitch, at least the Inhabitants use it as such, as well as the Bitumen of this Water. It is found to be excellent for Wounds, and to be good for curing inveterate and scrophulous Ulcers, according to Dr. Short.

Of the BURNING WELL at Brosely in Shropshire.

B*rosely* is a Village in *Shropshire*, four Miles North-east of *Wenlock*, seven North by West of *Bridgnorth*, and fourteen South-east of *Shrewsbury*. It was discovered about the Year 1711, and is seated about an hundred Yards from the River *Severn*, in the Neighbourhood of Mines of Coal and Iron, there being Coal Works on every Side, though none very near it.

A Candle being put down into the Well, it will take Fire at the Distance of a Quarter of a Yard, darting and flashing in a violent Manner, to the Height of 1820 Inches. It is hotter than common Fire, and boils any Thing much sooner; for it will boil a common Tea-Kettle in nine Minutes, and broil Mutton Chops or Slices of Bacon very soon, with an excellent Flavour. It will reduce green Boughs to Ashes very soon, or any Thing else that will burn; but the Flame may be put out by holding a wet Mop over it; however, the Water itself is extremely cold, and as soon as the Fire is out, it seems as cold as if there had been none there. Hence it appears that this Water is impregnated with a Sort of liquid Bitumen, called *Petrolæum*, that is, Rock-Oil. This Water has ceased burning since the Year 1752, on the Account of an Earth-quake.

quake. If it has not recovered this Faculty since 1755.

Of the BURNING WELL at Ancliff in Lancashire.

*A*ncliff is a Village three Miles from *Wigan* in *Lancashire*, and the Spring is called by the Inhabitants the Burning Well, but by *Dr. Leigh* a sulphureous Water, though improperly; for it is without Smell, and will not change the Colour of Silver.

This Water, like the former, will take fire on holding a lighted Candle near it, it spreads itself upon the Water in a calm Season, and will continue a whole Day, insomuch that Eggs and Flesh may be boiled therein; but the Water itself is cold.

When this Well has been emptied, and a Candle applied to the same Point where the Water burned before, the Vapour will take fire, and burn very bright and vigorous. This Well is but a few Yards distant from a rich Coal-Mine; and indeed the whole Country, for many Miles compass, is underlaid with Coal. The inflammable Vapour is undoubtedly a *Petrolæum* quite distinct from that of Sulphur. It does not appear that these two Waters have any particular Virtues.

Of MOFFAT WATER.

*M*offat is a Village of *Annandale* in *Scotland*, about sixty Miles South and by West of *Edinburgh*, and about five Miles North of *Carlisle*,
and

and is one of the most eminent sulphureous Waters in *Great Britain*.

There are two Springs or Wells separated from each other by a Rock, of which the Upper is most commonly used for bathing, it having a stronger sulphureous Smell than the other. It has the Smell of a Gun newly discharged, which it retains in Bottles well corked, which is soon lost in the open Air, and the Colour is milky, or blueish. It turns milky with Oil and Spirit of Vitriol, and Spirit of Nitre, but without Precipitation; it changes to a greenish with Syrup of Violets, and tinges Silver of a deep Copper Colour; it lets fall a blackish Sediment with the Solution of Silver, as also with that of Sugar of Lead.

A Gallon of the Water yields about sixty Grains of Sediment, of which four are calcarious Earth, and the rest chiefly of Sea Salt.

Those that bathe in the Waters stay in it a Quarter of an Hour or more, and it must be only luke warm. For Ulcers or Tumours they bathe the Part affected for about half an Hour, and lay Rags thereto dipt in the Water, the rest of the Day, continually moistening them as they grow dry. When the Lips of the Ulcer are hard and swelled, they expose the Part to the Steam of the Water, heated and confined by Flannels.

When taken inwardly, it is chiefly diuretic and alterative, though it sometimes purges. It is drank from eight to ten Quarts in a Day; and a Glass of aromatic bitter Wine, taken at or soon after the Drinking, helps weak Stomachs to digest it, and prevents the Inclination to sleep. Some drink this Water for five Seasons running, and it is thought to have no Equal in Pains of the Stomach, and in Colics of every Kind; it it also

good in a lost Appetite from drinking Drams, and in the Gravel. It is also famous for curing Barrenness, and has been of Service in all female Weaknesses; but it is not to be drank when the Patient has a Cough, or in a Disposition to a hectic Fever. It is good for Diseases of the Skin both inwardly and outwardly, even when the Limbs have been monstrously swelled, and the Skin covered over with Scales, Scurf, and Scabs. It has also cured many afflicted with scrophulous Sores, and it hardly ever fails unless the Constitution is decayed.

Of NOTTINGTON WATER in Dorsetshire.

*N*ottingham is a Village near *Weymouth* in *Dorsetshire*, and the Water has a strong sulphureous Smell, with a Flavour resembling that of boiled Eggs, and the Colour, in a Tin-Vessel, is blue.

At the Fountain Head a Shilling put into the Water becomes of a Gold Colour in two or three Minutes; but the Solution of Silver produces a yellow and dusky brown Cloud, with a dark brown grumous Sediment.

From the various Experiments that have been made, it appears that the predominant Minerals, with which this Water is impregnated, are Sulphur and Natron, and it is remarkable for curing Foulnesses of the Skin by internal Use.

Of CUNLEY-HOUSE WATER.

THIS Spring is seated two Miles from *Whaley*, and seven Miles West of *Burnly* in *Lancashire*. The Steam of this Water renders Gold brighter; but presently turns all white Metals black. It produces a brown Sediment with the Solution of Silver, and that of Lead; it changes green with Syrup of Violets, and kills Insects thrown into it, though it has a particular Sort of its own, which may be seen swimming in it when the Sun shines.

The Channel this Water runs in is lined with a bituminous Substance that is intolerably fetid, and is black below, and white above. It is strongly impregnated with Sulphur, combined with a little calcareous Nitre, and a Mixture of Sea Salt and of absorbent Earth; but we have no Account of its Virtues.

Of INGLEWHITE WATER.

Inglewhite is a Village in *Lancashire*. Dr. Short informs us it is a strong sulphureous and chalybeate Water, and that it is the Product of Shale and Brazil. This Shale partly resembles Slate, and will moulder, when exposed to the Air, into exceeding thin Flakes, like Leaves of fine Paper, and afterwards turn to a black Powder. The same Author thinks that it is a vitriolic Ore, and affirms that by its strong Acid it will waste the Lead Ore near it. A Gallon contains twenty-four Grains of Sediment, of which nineteen

are Earth and Oker, and five Nitre. It will not purge unless drank with Salt, which is all the Account we have of its Operation.

Of DEDDINGTON WATER in Oxfordshire.

*D*eddington is a small Market Town sixteen Miles North of *Oxford*, and six South of *Banbury*, and the Water has a strong fulphureous Smell like the Washings of a foul Gun; a Gallon of it yields eighty-seven Grains of Sediment, whereof forty-four are Earth, and forty-three Salt.

Deddington Water is impregnated with Sulphur and Iron, which are both so volatile that they are soon dissipated; besides which it has Salt enough to give it a purgative Quality; but what other Virtues it has we are not told.

Of GANESBOROUGH WATER.

*G*anesborough is a Market Town in *Lincolnshire*, commodiously seated on the River *Trent*, fourteen Miles North-west of *Lincoln*, and one hundred and thirty-seven North of *London*. The Spring lies South-east of the Town, and the Water at the Spring Head smells and tastes of Steel and Sulphur. A Gallon, after Evaporation, will leave an hundred and ninety-two Grains of Sediment, whereof an hundred and twenty are Earth, and seventy-two calcarious Nitre, according to *Dr. Short*; so that this Water is chiefly impregnated with Sulphur, Iron, a calcarious Nitre, and Earth.

Earth. It has somewhat of a purgative Quality, which is all we have to say of its Virtues.

Of the WATER on the Borders of Northumberland.

WE have little Account of this Water, only *Robinson*, in his Natural History of *Cumberland*, informs us, that it has a Smell like Gunpowder, which may be perceived at a great Distance, and that it changes Silver to a Gold or Copperish Colour; as also that it will cure the Itch, Scabs, and Ulcers, by bathing.

Of CODSAL-WOOD WATER in Staffordshire.

Codsall is a Village twelve Miles South-west of *Stafford*, and seven North-west of *Wolverhampton*, and in the Wood adjoining is the Spring here spoken of. *Dr. Plot* affirms that the Water is sulphureous. He compares it to that near *Ingestre* formerly mentioned; but observes that the Salt and Sulphur are not equally mixed in this Water as that; for though the Sulphur has so blunted the Acidity of the Salt, as to render it as inactive as an Alkali, yet the Salt is too weak to restrain the Volatility of the Sulphur, for it always emit a sulphureous Smell. In the Winter, and sometimes against Rain, one may smell it twenty Yards off.

It will not curdle Milk, but it will lather with Soap, and gives a green Tincture with Syrup of Violets. He farther informs us that he tried it with Galls, Oak Leaves, and with the Solution of sublimated Tartar; but none of them would

throw down the Sulphur, except Spirit of Urine, which turned it to a faintish red.

The Water of this Well is much clearer than that at *Ingestre*; and some Persons, near an hundred Years ago, were at the Pains of digging and boring the Ground near about it, and met with a Kind of mineral Earth, which crashed in the boring like rotten Wood, which, being carried to *London*, was found sulphureous.

This Water, many Years ago, when Leprosies were frequent, was accounted an excellent Remedy to cure that Distemper; and there was a House built near it called the Leper House. At present it is chiefly used against Scabs and Itch, both in Man and Beast, and it operates both by Stool and Urine. It will likewise sometimes vomit if the Stomach is foul, and about three Quarts of this Water is generally drank at a Time. The People hereabouts brew their Beer with this Water; and in Dr. Plot's Time, more especially at a House called *The Brimstone Alehouse*; and it is observable, that no one that lives there is ever troubled with Diseases of the Skin.

Of WILLOUGHBRIDGE WELLS in Staffordshire.

Willoughbridge is a Place in *Staffordshire*, six Miles North-east of *Drayton* in *Shropshire*; ten Miles South-west of *Newcastle*, and sixteen North-west of *Stafford*. The Well is seated in *Willoughby's Park*, and its Water is as clear as Crystal, only the Sides of the Glasses, after they have been used awhile, are a little oily, and of a bright yellow Colour.

If a few Drops of a Solution of Sublimate be let fall into this Water, it presently becomes of a deep Sack Colour, which seems to shew it has something of a lixivial Salt. It will lather with Soap, but will not curdle Milk, nor change its Colour with Syrup of Violets. Contrary to most other Waters, there is no Salt contained therein, at least the Evaporation of several Gallons left nothing behind it. However, the Solution of Sugar of Lead first turned the Water of a blueish yellow Colour, which afterwards faded to a muddy White. But there is one Thing very peculiar, which is, that its Oil or Sulphur is so very volatile, that when this Water was distilled in a Glass Body and Head, the Oil, or Sulphur, came over the Helm upon the first Heat, and was always in the Receiver before the least Drop of Water appeared.

There is such a great Plenty of this Water, that sixty Springs at least have been counted, and they send forth plentiful Streams. Dr. Plot informs us farther, that the Waters have performed several strange and unaccountable Cures; and he is of Opinion they might have performed more, had they been directed by a skilful Physician, which he attributes to its balsamic Virtue, and great Subtily and Volatility of the Waters. He farther adds, that if we were to judge of these Waters from the many attested Cures, he thinks that they would come as near to an universal Medicine, as any other in the World.

This Author acquaints us, that there are many other sulphureous Waters in this County, though not so clear and well concocted as these; for they are generally thick, and of a blueish Colour, with an unpleasant fetid Smell, like that at *Knare-*
borough

borough in *Yorkshire*. There is one at *Tettenhall*, about two Miles North-west of *Wolverhampton*, on the Highway Side near the Pound, which in the Summer Time has been observed to deposit a Sediment of almost all Sorts of Colours. He takes Notice of others that have a strong fetid Smell, one of which is in *Watling-Street Road*, not far from *Horsebrook*, and another between *Willenhall* and *Bentley*. There is likewise another in a watery Lane not far from *Eccleshall*. There is still another near *Hartsley-Green*, between *London* and *Gayton*, which has a petrifying Quality; and that at *Butterton*, in the Parish of *Mothfield*, by *Howbrook* Side, will tinge Silver of a blackish Colour in an Hour's Time.

Dr. Plot also acquaints us, that there are other Waters in this County that have evidently a Sulphur joined thereto. There is one of these in a Ditch, in the Park Meadow, under *Broughton* Park Pales, and another at *Monmoor-Green* near *Wolverhampton*, both of which will strike, with Galls, so deep a red, that they become after a while of a blueish, and at last almost of a blackish Colour. There is a third at *Grindlestone Edge*, about a Quarter of a Mile Eastward of *Horton* Church, that will turn red both with Galls and Oak Leaves, and yet will lather with Soap well enough. These Springs are taken Notice of, not for the Sake of any known Virtues that they have, but to direct some future Enquirer where to find them, who may perhaps, upon Trial, be able to ascertain their medicinal Qualities.

*Of the MINERAL WATERS at Llandrindod in
South Wales.*

Llandrindod is a small Parish of *Radnorshire* in *South Wales*, seated twenty-four Miles West of *Leominster* in *Herefordshire*; and *Raynder*, or *Rayador*, is another Market Town, which lies twelve Miles to the North-west of this Place. *Knighton*, another Market Town in *Radnorshire*, and on the very Edge of *Shropshire*, is twelve computed Miles North-west; but it is no less than twenty measured Miles. It is also one hundred and sixty Miles West by North of *London*.

Llandrindod, in *Welsh*, is the same as *Trinity* Parish in *English*, and it is seated on a Common, which extends itself to three more Parishes; this Common is about six Miles in Length, and about three Quarters of a Mile broad. The Mineral Springs are situated in that Part of the Common, that lies in the Parish we are now speaking of. These are the saline Pump Water, and the sulphureous Water, commonly called the black stinking Well. Besides these, there is a chalybeate Rock Water, that springs up in the Common, which is the Property of the Crown.

The Land adjoining to this Common, according to *Dr. Linden* is rural, pleasant, and open, but has a gradual Ascent; by which Means it encompasses a spacious Plain. The Hills that surround it, are not so high as those in *Caernarvonshire*, by which Means the Stagnation of the Air is prevented, and the Wind has a free Course from whatever Point it blows. The Air is exceeding healthy, insomuch that weak and consumptive

sumptive People soon revive and gather Strength, that come here to drink the Waters; which perhaps may be in some Measure owing to the Absence of Bogs or Fens, and all damp unwholesome Vapours.

The Soil hereabouts is rich, and very proper for Cultivation, and there are excellent Cattle that graze here, not to mention that the Inhabitants have all healthful Countenances.

The Neighbourhood produces good Barley, with which they brew excellent Ale; a Circumstance that is very agreeable to all the Visitors who are fond of that Liquor.

The medicinal Waters are come in Vogue merely by their own Merit, for nothing else has recommended them to the World. They are now frequented by very genteel Company, and Dr. *Linden* affirms they are, upon that Account, inferior to none in *Europe*; to this may be added, that in the Summer Time there is a great Resort of the common People, who come here in Crouds to make use of these Waters; but it is not above twenty-four Years ago since the better Sort came hither for that Purpose. There are now very handsome Houses fitted up, one of which in particular is large enough to contain several hundred Visitors. At present there are no Baths here, but it is very likely there soon will, for they now make Use of Bathing Tubs, which is a sufficient Hint to occasion more convenient Receptacles to be erected.

The Rock Water is so called, because it issues out of a Rock, which consists of what they call here Water Slate. When this Slate is dug out of the Ground, and exposed to the Air, it moulders

ders into Powder, which contains a large Quantity of Iron, Earth, Salts, and Sulphur.

A Glas of this Mineral Water, taken up in a clear warm Day, is as bright as Cryſtal; but after ſtanding ſome Time, it changes into a Pearl Colour. While it preſerves the Clearneſs, it has a ſtrong chalybeate Taſte and Smell, which forſake it as ſoon as it changes Colour. The Veſſels out of which it is commonly drank ſoon obtain a deep Tinge, or rather a thick Fur, ſuppoſed to be ferruginous Particles, or natural precipitated Crocus of Iron; but it is accompanied with a greaſy, unctuous Iron Mucilage. This Crocus, being thrown on hot Iron, emits a black Flame, with an offensive Smell, that cauſes a Coughing in the Standers by.

At the Spring Head this Water changes to a deep Purple with Powder of Galls and Green Tea, and turns at laſt to a Blue. However, when this Water has ſtood an Hour, after it has been carried to the Long Room, it will not change to any Colour with Galls, Green Tea, or Oak Bark. With Cochineal this Water turns Blue, and becomes hot with Oil of Vitriol. Rough Cyder and fine Sugar, mixed together with this Water at the Fountain Head, excites a Fermentation, or Ebullition.

This Water will not curdle with Milk, but with Oil of Tartar and volatile Spirits it will turn as white as Milk, that changes to a yellow Colour inclining to a Parrot Green. It preſerves its Transparency with the Spirit of Vitriol, Salt, and Nitré; but with Sugar of Lead it turns firſt Milk White, and at length lets fall a yellowiſh grey Sediment, which being analyſed, is found to contain about fifteen Grains of Crocus of Iron in each Quart,

Quart, and about five Grains of the bituminous Mucilage of Iron.

We are not told what Quantity of Salt this Sediment contains, except only that it is great. It does not melt in the Fire so easily as other Salt; but after it is cold, it appears like smelted Borax, and vitriolic Acids have no Effect upon it, nor yet does a damp Air affect it.

From these, and several other Experiments, *Linden* concludes that this Water contains Iron, Salt, Sulphur, and Vitriol.

This Water is generally good for all such chronic Distempers that proceed from Laxity of the Fibres, and Weakness of the muscular System; in particular it is good in scorbutic Eruptions, in weak Nerves, in the moist and convulsive Asthma, in *St. Vitus's* Dance, in Palsies, whether partial or total; in a Weakness of any particular Member, in the Falling Sickness, in obstinate Agues, in Obstructions of the lower Belly, in certain wandering, slow, nervous Fevers, in all Female Disorders, in Flushings or Redness of the Face, and in all Obstructions.

Of the SALINE PURGING WATER.

THIS Water is commonly called here the Pump Water, and from various Experiments it appears, that it contains a neutral Salt of native Borax, a small Quantity of Bitumen, an etherial, elastic, volatile mineral Spirit, and a mineral Oil.

We are told that this Pump Water is an excellent Remedy in the Scurvy and Tetters, in the hypochondriac Melancholy, in the Morpew, in Fevers upon the Spirits, in the Leprosy, and in all
such

such Distempers as proceed from corrupt Humours, and in the Gravel.

This Water, if the Disease is obstinate, requires some Time to cure it radically, and the Time is confined to the Summer, as being the best Season ; but they may be drank from the Middle of *March* till the Beginning of *November*, for then it is in the highest Perfection.

The Journey to these Wells should not be performed in a Hurry, but gently. As soon as the Patient is arrived at the Fountain, he should then consider what is proper to be done before drinking the Water. This should be always out of long narrow Glasses, and swallowed down gradually, by which Means the ethereal, volatile, elastic Spirits will diffuse themselves more easily through the smallest Vessels. Persons troubled with the Scurvy must use this Water both as a Purgative and Alterative ; and it is certainly very proper for the last, because it strengthens and warms the Stomach, excites the Appetite, promotes Digestion, and renders the Person brisk, lively, and vigorous. As a Purgative, enough must be drank to procure four Stools ; but as an Alterative that Circumstance should be much more moderate. The general Quantity is about three Pints a Day, taken as an Alterative, of which a Pint and a Half should be taken at three Doses, leaving a Quarter of an Hour's Distance between each Half Pint, and this should be done in the Morning before Breakfast. About an Hour before Dinner another Half Pint should be drank, and another about six o'Clock in the Evening, as also a Third at going to Bed ; but if the Body remains costive, the Quantity must be increased.

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As a Purge this Water should be taken twice a Week, and is best drank at the Fountain Head, drinking Half a Pint at a Time till it begins to work; but then the Patient must walk or ride between each Draught.

When there are Tetters and Boils, the Patient must bathe frequently, and wash the Parts affected with Water, using it inwardly at the same Time.

In hypochondriacal Disorders the Patient must also drink and bathe; but then no more must be taken than what the Patient finds agreeable to his Constitution; which must be generally much less than what was before directed; that is, he must drink no more than a common Glass at a Time; but then it must be drank oftener.

In the Leprosy so much Water must be drank, as to cause two or three Motions every Day; to which must be joined, bathing twice a Week in a warm Bath, made with equal Quantities of the Pump and sulphureous Waters.

In the Gravel, let the Patient take every Morning so much of the Pump Water as will purge him more than once, and then just so much as will freely pass off by Urine; this done, he should afterwards purge once a Week. When the Gravel is discharged by this Means, let the Patient drink every Morning Half a Pint of the Rock Water, with Half a Pint of the Pump Water for three or four Weeks more, and Half that Quantity going to Bed.

With Regard to the Diet, the Patient must abstain from Vinegar, Pepper, salted Flesh, and Fish, coarse leavened Bread, Cheese, Fruits, Salads, buttered Cakes, and every Thing that is heavy; but he may feed upon rich Broths or Soups, with a small Quantity of Salt, but with

no

no Seasoning except the common Pot-herbs. The other Victuals may be Flesh or fresh Fish, and that is the best Flesh that is fresh and young. The Patient may also use Beans, Pease, Kidney Beans, Asparagus, Artichokes, Potatoes, Turnips, Carrots, and Parsnips, which should all be well boiled; but too much butter ought by all Means to be avoided.

The Patient may drink good fine Ale, as well as Wine, Brandy, or Rum mixed with Water, which should all be the best in their Kind, add to these gentle Exercise, taking the Air, chearful Company, and the Diversions and Amusements of the Place,

Of the SULPHUREOUS WATER of Llandrindod.

THE sulphureous Water, commonly called the black stinking Water, is so named from its strong Smell, and the Blackness of the Channel through which the Water passes. Most Waters of this Kind have somewhat of the Smell like the washing of a foul Gun; they are actually cold; line the Sides of their Passage with a white slimy Mucus; they stink most in rainy Weather; and after a Drought, just before rainy Weather, the Spring rises with greater Impetuosity than at other Times. They also stop Fermentation in an Instant; they deposit a black Mud in their Passage; they turn Silver first yellow and then black; and they kill Insects. All which Characteristics belong to this Water.

From the various Experiments that have been tried by Dr. *Linden*, this Water appears to contain etherial volatile, mineral Spirits, a small

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Quantity

Quantity of a vitriolic Acid, a mineral unctuous Mucus, a fine mineral Oil, a subtile Crocus that will dissolve in Spirit of Wine, a perfect Sulphur, and a neutral Salt of a briny calcarious Texture.

This Water is of great Use in all Cases where bathing is requisite, when made into a lukewarm Bath. This will be highly salutary in benumbed Limbs, caused by an Apoplexy, in a wasting of the Flesh of the Limbs, and in paralytic Disorders. It is also good in the hypochondriac Passion, in venereal Disorders; for old Sores, Tetters, the Leprosy, and Scurvy; in the Stone and Gravel; in the Rheumatism, and gouty Distempers.

It also cures the King's Evil, when this Water is used internally as well as outwardly; but in the hypochondriac Passion, the drinking this Water must for some Time precede the Use of bathing. This Water is also an excellent Absorbent, and is efficacious in Sourness of the Stomach, Obstructions of the Liver, and in the Jaundice; it removes scirrhus Tumors, and yields great Relief in Cancers.

It is efficacious in the Bloody Flux, strengthens the Stomach and Bowels, and opens the Mouths of the lacteal Vessels. It is also good in Defluxions, in Contractions and Weakness of the Limbs; but then it must be used both inwardly and outwardly; but it is without compare in hectic Fevers. It is not to be despised in Weakness of the Nerves, in hysterical Colics, and in the Rheumatism. It is also beneficial in the Scurvy, tetters Eruptions, and old Wounds; in which Cases it is adviseable to drink, bathe, and likewise to dress the Wounds with the black Precipitate.

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Those that bathe in this Water had best continue in the Bath a Quarter of an Hour at first, and increase the Time, till they arrive at two Hours more or less, according to the Strength of the Patient. The most proper Time is in the Morning, if the Constitution will bear it, otherwise it must be deferred till the Evening.

However, before bathing, the Patient had best use the Flesh Brush, or Friction with Flannels; especially where the chief Complaint remains fixed, if there be any such.

After the Patient comes out of the Bath, he must immediately repair to a warm Room, and being well dried, he must go directly into a warm Bed in order to sweat. After he gets up, he must be cautious of exposing himself to the cold Air.

Sometimes this bathing is attended with Eruptions of the Skin; and in this Case the Patient must remain longer in Bed after bathing; and if he is dry, let him drink the sulphureous Water Milk warm; by which Means the Eruptions will soon disappear.

In Leprosies, and other obstinate Cases, it will be best to bathe three or four Times a Day; and then the Patient must be put into a warm Bed as soon as ever he comes out of the Bath.

In broken Constitutions, brought on by hard drinking, the Water should be used internally, as well as outwardly; for they may be drank as safely on the bathing Days as at other Times. The Patient may bathe from two to four Times a Week, according to the Nature of the Disorder. But sometimes it will be better to use one of the other Waters rather than this.

The Dose of this Water cannot in general be determined; but it is always best to begin first

with one that is small, that is, from a Pint to a Quart in a Morning, and about Half a Pint each Time, with short Intervals between the Draughts. This Quantity may be increased to as much as the Constitution will well bear; that is, as much as will sit easy on the Stomach, and pass off well; for when it gives the least Uneasiness the Dose is too large. The Course of drinking should be continued for four or five Weeks for each Time; but in this the Manner of drinking the Bath Waters will be the best Rule.

Of LLANGYBI WATERS.

LLANGYBI is a small Village in *Caernarvon-shire* in *North Wales*, and the Mineral-Springs are at the Foot of a round Mountain, of a very easy Ascent, from whence appear several delightful Prospects of all that Part of the Country, which is flat, and abounds with Gentlemen's Seats, Villages and Farms. This Mountain is entirely unconnected with any other; and on its Summit are the Ruins of a Castle, of which there is no written History, or traditional Account. At *Llangybi*, which is to the West of the Mineral-Fountain, is *Cardigan-Bay* in full view; and the nearest Part of that Bay, is about two Miles distance from the Spring, which is a most happy Circumstance, as Sea-Water, mixed with that of this Spring, has proved of the most salutary Consequences to scrophulous Patients.

The Air of *Llangybi* is naturally mild and salubrious, the piercing North and East Winds being, at a distance, intercepted by a large Chain of Mountains, so that it is fanned with Sea-Breezes, which are most refreshing to those who are afflicted with Disorders in the Lungs;
and

and salutary in most chronical diseases. The Country round *Llangybi* is very fertile, and the Plenty which abounds there, is a proof that the Visitors to this medical Water, need be under no Apprehensions of wanting delicate Provisions; the only thing wanting are good Lodging-Houses, an Inconvenience that will, probably, soon be removed. But such as have an occasion for an immediate Trial of this Water, for the Benefit of their Eyes, may easily put up with such Houses, as the Village of *Llangybi* affords, bringing with them only a few Bed-cloaths, and bathing

The Virtues of these Waters have been known for several Ages, to the Persons who lived in its Neighbourhood; and lately the Rev. Mr. *Williams*, Rector of *Llanystimdw*i, having made particular Enquiries of the Persons cured by these Waters, and having with great Humanity attended many whom he knew to be afflicted with chronical Disorders, whom he found received the greatest Benefit from them, informed the worthy Proprietor *William Price*, Esq; who generously caused proper Conveniences for Bathing, and other Improvements to be made at his own Expence; whence this excellent mineral Water has recovered its ancient Reputation, and a rational Use of it has been lately introduced.

With regard to the Qualities of the Water, the ingenious and learned Dr. *Linden* observes, that it has a harsh Taste, inclining to a bitter; it will not lather, and Soap is with great Difficulty, mixed with it. At the Fountain-head, Oil of Tartar per Deliquum, turns it of a white Pearl Colour, and, on its standing, precipitates a white Powder. Oil of Violets, renders it of a pale green, but on standing, the Colour grows deeper;

yet neither Spirits of Hartshorn, Sugar of Lead, nor Aqua Fortis, make any visible Alteration, though, with Oil of Vitriol, it instantly becomes extremely hot, and Globules of Air line the Sides of the Glass: but as the Water becomes cold, these Globules disappear, and a transparent white Sediment is left at the Bottom. One Gallon of *Llangybi* Water distilled in a Glass Retort, leaves a Sediment from fifty to sixty Grains. This Sediment contains about ten or twelve Grains of a slimy transparent Substance, which burns immediately on its coming near the Fire, and emits a suffocating Smoke, attended with a sour Smell, not unlike that of burning Soot; but no Kind of Salt is to be found in it. The Remainder of this Sediment is an extreme fine white Earth, upon which, neither the strongest Alkalis or Acids have any Effect. This white Earth will, in smelting, mix with Silver, as Lapis Caliminaris does with Copper, but makes the Silver more brittle, than Lapis Caliminaris does the Copper. In short, a Florence Flask with Silver-leaves in it, filled with *Llangybi* Water, were boiled and evaporated in a Sand Heat, 'till no more than about two Ounces of Water were left, when the Silver-Leaves had not in the least, changed their Colour; and the Water remained clear.

Hence it is evident that there is not the least Quantity of Sulphur in this Water; for was there a Grain in a Pound Weight, the Silver-Leaves, would have changed their bright Colour. It abounds with Phlogiston, mixed with a white metallic Earth, which Dr. *Rutty* observes, is serviceable in many Disorders; and, indeed, it has been proved to a Demonstration, that this
Water

Water will remove all Disorders of the Eyes, Cataracts not excepted, and is good for all Disorders, attended with large Boils and Tetters, as the King's-Evil, and all kinds of scrophulous Kernels, Swellings, scalled Heads, and ulcerated Legs; in all Eruptions of the Skin, as the Leprosy, Scurvy, Itch, and Wild-warts; in all nervous Cases, and in all Rheumatisms, the Palsy, Rickets, convulsive Fits, and Lameness; of most of which the learned Physician we have already mentioned have given remarkable Instances, with the different manner of Treatment in each Case.

HANLEY'S-SPA MINERAL WATERS.

THE two medicinal Springs we are here treating of, called saline purging and calibeate mineral Waters of *Hanley's Spa*, are on the Estate of *Thomas Powys, Esq;* a Gentleman always willing to promote, by his generous Encouragement, any Discovery that may be beneficial to Mankind. They are situated in the Parish of *Meole Brace* and Township of *Pulley*, two Miles and a Half from *Shrewsbury*, in the County of *Salop*, in a Valley between two Eminences, both which are stored with Variety of Minerals. The Coal-pits at the *Hanley's*, lead us to the very Minerals from whence these medicinal Waters receive their Virtue. These Coals are of a two-fold Nature; the one contains more than a common Share of Sulphur and vitriolic Acids; and under them is a Mineral Mixture of Mundic Salt, Slate, Iron-Stone, and bituminous Earth. The other Coal is of a more bituminous Kind, and under it is not such a Variety of Minerals as in the former, but it abounds

more in Iron-stone, and a soft stony Substance, with Impressions of petrified or preserved Vegetables. To the West of these medical Waters, is a Bed of Lime-stone intermixed with Salt, Slate, and Iron-stone; add to these, at about the depth of seven or eight Yards, is a Bed of Sand; the intermediate Space, from the Surface to the Coal and other Minerals, is a blue, and, in some Places, a reddish Clay, intermixed with vitriolic Lumps or Clusters of Marcasites.

The *Hanley's* Spa Mineral Waters, particularly the saline Purging Water, Springs up with great Impetuosity. There are several calybeate Springs within the Circumference of the Mineral Mixture, and these are recommended to be drank by all those who take the saline Waters.

Dr. *Linden*, who has made a Variety of Experiments, on the mineral purging Water, observes, that it is perfectly clear; the Taste is saline and bitter, but not disagreeable; and that when exposed to the Air, it neither changes its Colour, nor loses its purgative Quality. That Spirits of Salt causes no Alteration in this Water, except a small Motion, without separating any of its Contents, and leaving the Glass in which they are mixed with Air-Bubbles. The same is observed with respect to Spirit of Nitre and Spirit of Vitriol; but Oil of Vitriol instantaneously causes a violent Heat in the Water. That a Solution of Mercury Sublimate gives this Water a whitish Cast, which on standing, precipitates a Sediment of an Orange-yellow Colour; after which, the Water becomes clear again, and, in a plentiful Manner, lines the Sides of the Glass with Air-bubbles. That a Solution of common Quick-silver causes a precipitate of an unpleasing

ing yellow Colour. A Solution of Roman Vitriol, causes a precipitate of a greenish Colour, and lines the Glass with Air-Bubbles. A Solution of white Vitriol, turns the Water of a Pearl-colour, which, on standing, precipitates, and the Water becomes clear again. The Spirit of Hartshorn, and Spirit of Sal Armoniac, gives the Water a milky Colour, which, on standing, coagulates or breaks, and separates itself from the Water, as Curds do from the Whey, which precipitates in the same Colour. and Oil of Tartar per Deliquum, affected the Water in the same manner. That a Solution of Pearl-ashes caused in this Water a beautiful transparent white. But that the Solution of Alum, Oil of Vitriol, and Aqua Fortis, caused no Alteration, when mixed with this Water. Twenty-five Ounces of this Water, on being evaporated in a Glass-Receiver, left a hundred and sixty Grains of Sediment; which, on a proper Separation, produced a hundred and twenty Grains of small grained purging Salts, of an opake Snow-white Colour, like those of *Sedlitz* in *Bohemia*. This Salt, when thrown into an ignited Crucible, smelts as thin as Water, but loses its Weight. The Sediment, with the Salts, and what was left, when the Salts were separated from it, were each, by itself, sublimated with Arsenic, the Produce of which, was a fine deep Orange coloured Substance. If these Salts are exposed in a dry Air, they do not change, nor do they moulder into a white Magnesia, like Powder, as the *Cheltenham*, *Epsom*, and other purging Mineral Water-Salts do. These and many other Experiments that have been made on *Hanley's* Spa purging Water, shew that it is exactly the same with the Mineral Waters of
Sedlitz,

Sedlitz, which were, by *Dr. Hoffman*, introduced into the medical Practice, and on which, he bestows the highest Encomiums, calling them the noblest Waters of the Kind, and preferring them, in chronical Cases, to all the purgative Medicines of the Shop. When this purging Water is taken up at the Spring-Head into clean Bottles and well corked, it will bear Exportation, and retain its purgative Virtues, as well as those of *Sedlitz*.

With respect to *Hanley's Spa calybeate Waters*, they are as near as possibly can be expected, of the same nature with those of *Scarborough*, and *Llandrindod*, but differ from them in the following Respects. The *Hanley's Spa calybeate Waters* is much clearer than *Scarborough* and *Llandrindod Waters*, and has a much more penetrating, volatile, and pleasant Smell. It has more Mineral Spirits, Salts, and calybeate Contents. There is no Alum in the *Hanley's Spa calybeate Water*, but it is an Ingredient in those of *Scarborough*. The Chalybeate we are here treating of, never varies, but is in all Seasons, and in all Weathers, of one unalterable nature; this is not the Case with those of *Scarborough*, which undergo considerable Alterations for the worse, by Rains, Frost, and the Sun-beams, that beat upon them. And the volatile Mineral Spirits do not exhale so exquisitely quick and soon from this chalybeate Water, as they do from the Rock-Water of *Llandrindod*. By a Variety of Experiments, these excellent chalybeate Waters are found to contain volatile Mineral Spirits, a volatile Iron-Principle; Iron-Ore, finely dissolved, and neutral Salt, Sulphur, or common Brimstone, a white metallic Earth, and Water, as the Vehicle to all these Ingredients. *Dr. Linden* ob-

serves,

serves, however, that it will not bear Carriage, and that it loses its Virtues when exported.

The saline mineral Waters have produced remarkable Cures in an obstinate Scurvy, Leprosy, Debility of the Limbs, white Swellings, Ulcers in the Legs, Inflammations and scrophulous Humours in the Eyes, the Gravel, and Asthma.

The saline mineral and chalybeate Waters, cure Epilepsies, and the many Disorders that proceed from Humours thrown upon the Lungs; from a bad cured Itch or Fever, and those proceeding from a thick fiery Blood, and Obstructions in the primary Passages.—*The saline Waters are sent to OWEN's Mineral Water Warehouse in Fleet-street.*

Of the MINERAL SPRINGS in Cornwall.

IT is a little surprizing, that the mineral Waters of *Cornwall* have scarce been so much as mentioned by any Writer, especially considering that this Country abounds so much with Minerals, and therefore was most likely to excite the Curiosity of Physicians and Naturalists. However, we are at length enabled to say something of them, by the Assistance of Dr. *Borlase*, in his Survey of *Cornwall*.

Madern Well he calls a spring of pure Water, though the Soil round about it is black, boggy, and light; but the Stratum, through which the Spring rises, is a grey Moor Stone Gravel, called by the *Cornish*, *Grouan*. This Well is seated in the Parish of *Madern*, four Miles West of *Penzance*, and is resorted to by many People afflicted with Pains, Aches, and Stiffness of the Limbs. They come hither to wash, and many Cures have been said to have been performed by it; but Dr. *Borlase* is of Opinion, that it only acts by its cold and limpid

limpid Nature, because it is without any mineral Impregnation, at least as far as he could find.

Euny Well rises in the Parish of *Sancred*, thro' the same Soil as the former; and because it has done extraordinary Cures, there is a Chapel adjoining to it, dedicated to *St. Eurnus*. The Ruins of this still discover a great deal of Carving, which plainly shews that this Spring was formerly of very great Note. Its greatest Reputation is for drying up Humours, and for healing Wounds and Sores. It has no evident Mineral Impregnation, and therefore *Borlase* thinks its Effects are owing to the mere Coldness of the Water, by its bracing up the Nerves and Muscles, and strengthening the Glands.

Another Well of this Sort is called *Holy Well*, and it rises about a Mile and a Half to the North-west of *St. Cuthbert's* Church, in a small sandy Bay, where there are several Caves made in the Cliff by the northern Sea. In one of these Caves, at the North-East Point of the Bay, and at the Foot of a high Cliff, is this Well. The Entrance is low, but by the Help of some Steps cut into the Rock there is an Ascent of about fifteen Feet perpendicular. The Water, which drops from every Part of the Roof, is collected into a little Basen, from whence a small Rill proceeds, not more in Circumference than a Reed. There are short mammillary Stones of the Stalactites Kind, which hang from the Roof; and the Floor of the Rock is covered with the same Substance. This Water will not change the Colour of Green Tea, nor curdle Milk; from whence it is concluded, that there are neither Steel nor Alum in its Composition. After Evaporation to one Half, no Pellicle appeared, nor did it shoot into Crystals; for
which

which Reason it is thought to be void of acid Salts; however, it deposited a small Sediment, of the same Colour and Substance with the calcarious Incrustations of the Well. Some of this being reduced to Powder would not melt over the Fire, nor had it any particular Taste or Smell; nor yet did it flame when thrown into the Fire; likewise, when thrown on a red hot Iron, it emitted neither Smoak nor Smell. However, this Water is greatly commended in Fluxes and Disorders of the Bowels.

There are several chalybeate Springs in *Cornwall*; but the most remarkable of this Kind rises in the Tenement of *Colurian*, in the Parish of *Ludgvan*. The Bed through which this Water flows is a loose pebbly Ground, mixed with a gravelly Clay, full of an ochreous Iron Mineral, from which the Taste and Smell of the Water proceeds. It turns to a deep reddish purple with Galls, and with Green Tea to a lighter Purple. With Oak Leaves it becomes of a blueish Black, and has a Purple Cast. Upon pouring two Thimblefuls into Half a Pint, it made but a small Effervescence. After this Water had stood with the Galls for some Time, it retained its Purple Colour and Transparency. Upon dropping gently a large Thimbleful of Syrup of Violets, into three Fourths of an Inch of the Mineral Water, it retained its usual Colour towards the Top of the Glass; but the middle Part turned to a pale greenish Yellow, which reached within Half an Inch of the Bottom, and the Remainder was of a light Purple; but upon stirring it, after it had stood half an Hour, the whole became of a deep green Colour. When a Thimbleful of Oil of Tartar was dropped into this Water, it fell immediately

diately to the Bottom of the Glass, which held about Half a Pint; but it precipitated no Sediment, nor turned the Water milky, thick, or chalky; the Colour was more inclinable to that of a bright Oker, but was scarcely discernible. Upon suspending a Piece of polished Silver for about Half an Hour in the inclosed Well, it did not turn blackish; by which it appears that little or no Sulphur exhales from this Water. In the Morning, before the Water is stirred, there is a Film or Skin on the Surface, with all the Colours of the Rainbow shooting to and fro. From this there is some Reason to think, that a Naphtha is mixed with this Water, which rises to the Top, when it is left quiet for any Time. In a calm, but not very warm Morning, in the Year 1734, on the 7th of *August*, and before Eight o'Clock, the Water was almost Blood warm, and the common Water, which runs about nine Feet from this Spring, was as cold as Ice; but after carrying it about a Mile or two, it lost its Warmth; from whence Dr. *Borlase* concludes, that it is best to drink the Water upon the Spot. After it has been exposed in the open Air for twenty-four Hours, it undergoes no Alteration from Galls, which seems to be owing to the flying off of the volatile Spirit. This Water is very smooth, mixes well with Milk, and lathers readily with Soap. The Virtues of this Water are very great, for *Borlase* himself knew two Persons, who by drinking the Water, and washing the Parts affected therewith, have been cured of the King's Evil; he likewise heard that many others had been cured of the same Disease in the same Manner. It is very diuretic, greatly promotes Perspiration and other Evacuations; it relieves Obstructions and Swellings

lings of the Belly, and restores a lost Appetite. Externally it cures Sores of every Kind, and the Eruptions of the King's Evil; it is also very good to wash the Eyes with.

Mr. *Vallack*, an eminent Apothecary in *Plymouth*, and well skilled in Chemistry, affirms, that the Water at *Kern-Key*, near *Redruth* in *Cornwall*, is found to be impregnated both with Iron and Tin; but what its particular Virtues are, is not said; but if we consider the Virtues of Tin in general, it might probably be of great Use to cure Worms in Children.

Of the MALVERN WATERS.

THERE are two Springs, which more peculiarly deserve Notice. The Source of one is about a Quarter of a Mile below the Village of *Great Malvern*: This is a light and very pleasant Chalybeate. The other rises higher up the Hill, about the Mid-way betwixt *Great* and *Little Malvern*, and has been long distinguished by the Name of the *Holy Well*; it having for more than a Century been famous for the Cure of many obstinate Diseases. These Waters have been analysed by Dr. *Wall*, an eminent Physician at *Worcester*, and many Experiments and Observations made thereon by him; and as that ingenious Gentleman has favoured the Public with an Account of such Experiments and Observations, and also of a Number of very extraordinary Cures performed by them, we think, it will be most satisfactory to our Readers to give them an Abstract of what that learned Physician hath said concerning them.

Both

Both these Springs, the Doctor says, are of uncommon Purity. In the Year 1743, after a very dry Season, he evaporated three Quarts of the *Holy Well* Water in an open Silver Vessel; when no Residium was left, that could be collected; only the bottom of the Vessel was tinged with a pale yellow Colour: A Proof that the Water contains some bituminous or oily Parts. And last Year after a long wet Season, when the Source must have received some Foulness from the Mixture of extraneous Bodies washed into it, by the continual Rains, two Quarts of this Water being carefully and slowly evaporated, left only half a Grain of Earth, and a very inconsiderable Quantity of a saline Matter, too small to be estimated; probably not the sixtieth Part of a Grain.

This extraordinary Purity seems to be the distinguishing Characteristic of these Waters; in which Respect, they greatly exceed any, that have hitherto come to our Knowledge.

The purest Waters in the City of

Worcester contain more than 50 times,

The *Hot Well* at *Bristol* 20 times,

And the Spring at *Harwich Hill*,

near this City, which has been

always thought extremely pure,

contains 12 times.

as much
Earth as the
Hot Well
Water at
Malvern does

It may be proper here to observe, that this Earth (by which Word we mean the Matter left upon the Evaporation of mineral Waters, when perfectly cleared of all Salts) is soluble only in part by the strongest Acids; but that the much greater Portion of it eludes their Force, and even the Violence of Fire itself: much less, therefore, can it be conquered by the digestive Powers of the human

human Body. Those Waters consequently must be most salutary, which contain the fewest of these insoluble Particles. The Chalybeate Spring approaches the *Holy Well* nearly in Point of Purity: for two Quarts of this are found to contain only one Grain of Earth, one Grain of Iron, and nearly the same Quantity of a muriatic Salt, which grows moist in the Air, and therefore appears to be Bittern. On this Account, it seems to challenge one of the first Places amongst the Waters of this Class: for though it be not so highly impregnated with Iron, as some others, yet it is sufficiently so to answer all our Expectations from it as a Chalybeate; and being much less loaded with Earth than any other, it seems probable, that the ferruginous Particles will for that Reason be more readily and intimately mixed with the Blood and Juices, whilst the Water, by its extreme Purity, pervading the finest Vessels, washes away the acrimonious Salts and obstructing Viscidities.

From the most accurate Analysis, it appears, that at the Spring Head, *Pouhon Spa Water* contains four times more of the Chalybeate Principle, than this Spring; but at the same time is loaded with four times more Earth. *Tunbridge Water* contains three times more Iron, but has six times more Earth. *Cheltenham* and *Scarborough Waters* have only the same Quantity of Iron, but are very much loaded with Earth. *Cheltenham Water* in particular contains eighty eight times more than this Spring. And, to instance no more, *Bath Water* has nine times less of the Chalybeate Principle, and contains twenty-eight times more insoluble Parts than the *Malvern Water* does.

Thus far the Purity of the Waters, in respect of Earth, has been considered; but they are also possessed of a mineral Spirit, and some other Principles, not so easily discoverable by Experiments, to which notwithstanding their Virtues may probably be in a great Measure owing.

The Water of the Chalybeate Well at the Spring Head, instantly strikes a fair Purple with Galls; and if carefully taken up and close corked, will retain the same Property several Hours; but the Colour gradually grows more and more pale, and at last approaches to the Orange. The Water of the *Holy Well*, when drank immediately as it comes out of the Hill, leaves a peculiar Pertness in the Throat. This is by some likened to the Taste of Brass or Alum, and is most perceptible by those, who have not been used to the Water; but this Taste is soon lost, and the Water grows softer after it has been kept some Time, though the Bottles be ever so carefully stopped.

With this Water either Acids or Alcalies mix without the least Alteration in Transparency, and without any Precipitation or Conflict. And yet, it seems to contain a concealed Acid, because Iron laid in the Water is corroded; and with a Solution of Silver, though at first it mixes without any Milkyness, yet by standing some Time the Water grows gradually whitish, and then muddy, and of a dirty reddish Purple, and at last a Powder of a deep purple Colour is precipitated: which is the Effect of the vitriolic Acid. A Solution of Soap in Spirit of Wine being poured into this Water, produces a very pale pearl Colour, but without curdling in the least. This Colour is much less milky in dry Seasons than after much Rain; a Proof that the Water is
more

more pure in the former. Upon the Whole, the Efficacy of this Water seems chiefly to arise from its great Purity; whereby it is enabled to pass through the smallest Vessels, and not being loaded with any Salts or Earth, is capable of dissolving more than those Waters, which are already saturated with them.

Its Effects externally, both in Lotion and Bathing, may, in a great Measure, depend upon the same. Since it is past all Doubt, that Fluids may enter the Body this Way by the absorbing Vessels; and that those will be most easily admitted, which are purest and least loaded with heterogeneous Particles. And as Waters, which are full of styptic or insoluble Earths, are well known to occasion glandular Obstructions; so, *vice versa*, pure elementary Water seems to be the most efficacious of all Remedies in these Disorders.

But beside this extreme Purity, this Water must be assisted in its Action by a volatile mineral Spirit, which it appears to contain, as well as by the bituminous, or oily Parts; and probably by some others not yet discovered. For, however the Methods of examining Mineral Waters may have been improved by the Sagacity of later Chymists, we are certainly still very far from Perfection in that Point; and perhaps, the most active Parts of Waters, on which their Virtues chiefly depend, may lie so much out of our Reach, as not to be the Objects of Sense, or discoverable by any Experiments. Let any one examine the most curious Analysis of *Bath* or *Spa Waters*, hitherto published, and he must necessarily be convinced of this Truth. Some Preparations of Antimony and other Minerals will, we know, communicate very extraordinary Qua-

lities to Liquors in which they are infused, and yet as nothing discernable is lost by the Mineral, so nothing could by any Analysis, be discovered in the medicated Liquor. May not Waters therefore be impregnated in somewhat the same Way, by Effluvia from mineral Substances; and perhaps from some hitherto unknown to us, and whose Properties therefore we are unacquainted with? And who will venture to assert, that there may not be many such in the Bowels of the Earth? But whether by any Experiments we can discover the principal Contents of this Water, or not, so long as it is found to produce such extraordinary Effects, we may rest satisfied. And Experience here speaks loudly in its Favour, it having been long used with the utmost Success in the following Disorders.

Their V I R T U E S.

In all Diseases of the Skin, or cutaneous Distempers, these Waters are the most powerful and effectual Remedy ever yet found out; since they not only remove all Eruptions and Foulnesses of the Skin, but have perfectly cured even the most confirmed Leprosies; as appears by the most undoubted Testimony. They are also of the utmost Benefit in all scrophulous Cases, Tumours and glandular Obstructions; also in scald Heads; in old Sores, and even in Cancers; and there is undeniable Proof, that they have perfectly restored to Health many Persons, who have been afflicted with the King's Evil in the most miserable Manner: They are of prodigious Service in all Inflammations and other Diseases of the Eyes; they

they have also been found very beneficial in the Gout, Stone, Scurvy, and all cachectic bilious and paralytic Cases; in inveterate Disorders of the Head, and also where the natural Discharges of the Sex are deficient, which they assist by procuring a due Fluidity of the Humours.—— There is one Disorder, however, in which these Waters are found not to agree, which is the Cardialgia or Heart-burn.

In cutaneous Diseases, the internal Use of the Water is apt, for some Days, to increase the Eruptions; but by longer Continuance it washes them off, and clears the Skin. In Scorbutic Habits also, it produces similar Effects, when applied externally; but by continuing its Use, all these angry Pimples are commonly soon healed, and disappear.

The Waters, upon their first Use, create in some a slight Nausea; others they purge briskly for three or four Days; but are diuretic in all. The former effects are probably accidental, arising only from their being taken in too large Quantities, or from their dissolving some acriminous Salts, or bilious Foulnesses, in the first Passages. Persons who have been used to Malt Liquors they commonly render costive; but there are Instances, where the Waters, after having been drunk a considerable Time, suddenly take a Turn downwards, and purge briskly. Dr. Wall always advises his Patients to drink freely of the Water for some Days, or Weeks, before they use them externally. The empirical Method of Application, which has hitherto been successfully practised, is to wash Sores, Tumours, &c. under the Spout, several Times a Day; covering the Parts afterwards with Cloths dipt

in the same Water, and moistened from Time to Time, as often as they grow dry. — Those who bathe for cutaneous Foulnesses, usually go into the Water with their Linen on, and dress upon it wet. This Method, odd as it is, says Dr. Wall, has never yet, that I have heard of, been attended with any ill Consequence ; though I have known it used by several very tender Persons.

When the Water is applied externally, especially to old Sores or glandular Obstructions, it is apt at first to bring on a slight Fever and inflame the Parts. This adventitious Heat is commonly soon relieved by drinking freely of the Water, which washes out of the Habit any morbid Particles which may have been received into the Circulation, and the Fever usually goes off in four Days at furthest. Sometimes, when the Water is applied to indurated Glands, or incysted Tumours, the Heat rises higher, so as to bring on Suppurations ; an Event by no means to be dreaded, since thereby the viscid stagnant Juices are attenuated, concocted, and so fitted for Evacuation, and the Circulation (which in scrophulous Persons is usually too languid, either from a Lensor in the Fluids, or too great Debility in the Fibres) is accelerated and invigorated. The common People are, from long Observation, so well apprised of these Effects, that they think the Assistance of a Surgeon is upon no Occasion necessary ; and their usual Phrase is, that the Water will break any Tumour, and afterwards heal it. This, like many other popular Opinions, is very erroneous ; for granting the Lotion to be one of the best Applications in such Cases, yet it certainly may require the Hand of a skilful Surgeon, to open the Abscesses, or dilate Sinuses ;

to prevent the Lodgment of Matter, or procure a free Discharge by a proper depending Opening. After this is done, the Water is perhaps the best Dressing that can be applied, and seldom fails to effect a Cure soon, which, without such Assistance, might be uncertain, or at best very tedious.

N. B. As having these Waters, and indeed all others, GENUINE, is of the greatest Consequence to those who drink them, we can safely recommend the *Malvern Water* that is sold by Mr. OWEN (*Succeffor to the late Mr. EYRES*), at his Mineral-Water Warehouse in *Fleet-street*, being filled and sealed under the Inspection of Mr. DAVIS, Apothecary and Chymist in *Worcester*; who, together with Dr. WALL of the same City, hath made many ingenious Experiments on these Waters.

A
T R E A T I S E
O N T H E
N A T U R E , P R O P E R T I E S , & C .
O F
F o r e i g n M e d i c i n a l W a t e r s .

Of the PYRMONT WATER.

THIS Water hath for Ages been in the highest Repute for its Medicinal Virtues. *Pyrmont* is a Town in *Germany*, in the Circle of *Westphalia*, on the Confines of *Brunswick*, and lies about forty Miles South-west of *Hanover*, East Longitude 90, Latitude 52. It is the Capital of a County of the same Name, has a strong Castle, and was formerly subject to its own Lords; but now belongs to the Prince of *Waldeck*, who nominates a Governor. There is a great Resort of *German* and other Nobility, to drink the Waters. In the Neighbourhood there are one or two Salt Pits; and not far from the Town are the Elector of *Hanover*'s Silver and Iron Mines.

Dr. *Rutty* says:—In Order to a just Comparison of this celebrated Water, both with the *German Spa*, and our ordinary *English* and *Irish Chalybeates*,

beates, I shall, after describing its sensible Qualities, and shewing its superior Strength, relate the Experiments made on it in common, with other Chalybeate Waters. By the Smell, we discover in the Wells a sulphureous Vapour, which makes the Water-dippers giddy, and it is from this, that Fish, Frogs, Ducks, &c. when thrown into these Wells, grow giddy, lose their Strength, and at last fall down. This is also what affects Mankind on drinking it, with a kind of Intoxication or Drunkenness, and is probably owing to the Acid of Sulphur, greatly subtilized. This Water also abounds with Air, or an elastic Vapour, more than the common Acidules. I observed the rising of the Bubbles, consequent upon pouring it out into a Glass, from a well-corked Bottle, to continue eight Hours, when the like Bubbles from bottled Ale, did not continue above four Hours. It is of a Taste first Acid, like Wine, pungent and refreshing, afterwards austere, and like Vitriol. It is exquisitely lympid, notwithstanding the large Proportion of chalybeate Contents it yields. The Water is observed to suffer no Change as to Strength, by wet or dry Weather, and is, indeed, one of (if not absolutely) the richest of all Chalybeates; as appears, 1. By the great Quantity of ochreous Sediment it yields; 2. By the redder Colour of the same; 3. It retains its vitriolic Taste, when it has been exposed three Days in a wide-mouthed Glass, nor does it quite lose it in six Days, nor the Property of striking Purple with Galls, with which it strikes a deeper Tincture, and retains this Property longer than the *German Spa*; 4. It bears a greater Heat than common Chalybeates; for it

tinges

tinged a deep purple with Galls, when blood warm, nor does it cease to strike a Purple with Galls, though weaker, at the Degree of scalding hot; nor entirely loose this Property, when just boiled; 5. It bears Carriage better than the *Pouhon* Water; nor is the *Pyrmont* Water so soon spoiled by the Air, having been kept a Summer and Winter without Decay.

With Alcalis and other usual Precipitators, the Appearances were as follows, *viz.* Oil of Tartar, *per Deliquium*, precipitates from it a large white-yellowish grumous Sediment. The like Appearance arises from Spirit of Sal Ammoniac, with a white Incrustation upon the Sides of the Glafs. It does not lather, but yields large Curds with Soap. With Lime Water, a small yellowish grumous Precipitation is made: With Solution of Sugar of Lead, a brownish white Precipitation: With Solution of Silver in Aqua Fortis, a Copper-coloured Scum, and a large white-brown grumous Sediment: With Acids, whether mineral or vegetable, it makes a manifest Ebullition; and it is observable, that the Ebullition is much greater in the fresh Water, than in that which has been exposed to the Air; as also that it makes a greater Ebullition with Acids, than the *German* Spa. With an equal Quantity of Milk, Authors observe, that it prevents its Coagulation in Summer Time; and that being mixed with Milk, it preserves it from curdling four or five Days. With the tincturing Articles, the Appearances were these; with the Austeres, as Tea, Balaustine Flowers, and Galls, first a Blue, then a Purple, and then a black Colour: With Logwood, Blue; with Syrup of Violets, a deep Green; from Sena and Rhubarb, it drew deeper Tinc-

Tinctures, than did either common Water, or distilled Water.

From one Gallon of this Water, you may obtain about two Drams and two Scruples Residuum. This Residuum is of a pale brown, or white and reddish Colour; it is of a brackish Taste, and nauseously bitter; it does not so soon grow moist in the Air, as the Residuum of several other Waters. It yields about one-third Part of Salt, which is entirely different from the Salt yielded by the *German* or *Pouhon* Spa, not only in Taste, but other Appearances; for though it excites an Ebullition, and an acid Vapour with Oil of Vi- triol, (though less than the Salt of the *Pouhon* Wa- ter) it makes no Ebullition with other Acids, which the Salt of the *Pouhon* Water does; nor does it turn of a deep Green, with Syrup of Vio- lets, as the Salt of *Pouhon* Water does, but only of a dilute Green; and its Solution yields white Grumes, with Oil of Tartar, *per Deliquium*; and half a Dram of it, boiled with half a Pint of Milk, curdles it strongly. All Physicians agree, that this Water hath many and great Virtues. As to its Manner of operating, it commonly proves diuretic, frequently sudorific, even to such as otherwise sweat with Difficulty: When the Hu- mours abound with Salt or Bile, it commonly causes a breaking out on the Skin for a little Time. It commonly moves to Stool, and re- markably more than the *Pouhon* Water, and it tinges the Stools blacker than other Acidulæ, from the greater Proportion of ferrugineous Prin- ciples it carries. And as to its Virtues, it corrects the saline, bitter, and sharp Humours, of the Stomach and Bowels, sweetens the whole Mass of Humours, tempers the Heat of the Blood, at- tenuates

tenuates and dissolves all Obstructions of the Lungs, Kidneys, and small Vessels, and carries off all Impurities through the several excretory Ducts ; and moreover, as it strengthens the Tone of the solid Parts, it prevents the fresh Accumulation of bad Humours.

It is of the greatest Efficacy, in all Disorders of the Stomach and Bowels ; in pituitous, flatulent, and bilious Cholics ; in the Worms ; in paralytic Disorders, Convulsions, Cramps, scorbutic Disorders, Chlorosis, obstructed Menfes, Relaxations of the Matrix, and Barrenness.

Ordinary bloody Fluxes are cured by these Waters, in a more safe and sure Manner, than by any other Method. They may also be very profitably drunk, mixed with half Milk, and thus taken are of great Use to gouty and scorbutic Persons.

The after Effects of these Waters, like those of the *Bath and Tunbridge*, are confirmed by universal Experience, viz. that the greatest Benefit is received some Weeks or Months after drinking them : and there are Instances, where the first and second Year, the Water made no Alteration in the Distemper, nevertheless, the third or fourth, the Patients were perfectly cured.

Some Observations relating to the Method of taking them, may not be improper here.

The Water-drinkers at the Wells generally take from three to six Pints, and find no Inconvenience, but good Effects from it : But in this Kingdom, the common Practice is to drink them, with or without Wine, at Meals ; and sometimes an Half-pint Glass besides, twice a Day, in the Morning and Afternoon, according as the Physician shall prescribe, and whose Advice we would recom-

recommend all Water-drinkers to take, before they begin their Course.

Dr. *Stare* observes, 1. They are a proper Remedy for most Diseases of the Stomach, as want of Appetite, or defect of Digestion, from Weakness, or Relaxation of the Fibres of the Stomach; also in canine and excessive Appetites, sour and bitter Vomitings, Heart-burning, or Cardialgia, and many other Stomach Distempers; 2. For Diseases of the Bowels; such as painful and griping Cholicks, proceeding from corrosive or fretting Salts, contained in the bilious or other glandulous Juices of the Bowels; these are diluted, altered, or sweetened by the Chalybeate Virtue of these healing Waters, and the Chyle itself is better prepared, and elaborated, in the Region of the Bowels; and being freed from disordered Qualities, is conveyed into the Blood, better adapted for Sanguification: And in hypochondriac Diseases, where pent-up Vapours, and flatulent Humours, rack and lacerate the tender Fibres and Membranes of the Stomach and Bowels, these salutiferous Waters are esteemed Specifick.

3. Their Virtue is not confined to those Parts called the Primæ Viæ, or first Apparatus of the Chyle, but extends farther; even penetrates the Mass of Blood, and is of manifest Use to cure the Jaundice, and even Dropsies (if not too far gone.) It dilutes and washes the scorbutic Salts out of the Blood, and at the same Time washes off the Gravel and smaller Stones collected in the Kidneys, Ureters, and Bladder, and prevents their Concretions in those Parts again. By them the latent Seeds of many Diseases, fixed in the Organick Parts, such as the most sagacious Physician cannot perceive, are carried off, or obliterated in
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their origin. Sickly, and squalid Countenances; visible Indications of a depraved State of Health; shall, after a convenient Use of these Waters, look healthful and sanguine; by these the very Texture of the Blood is amended, drooping Spirits are cheared, exhilarated, and enabled to do the various Offices of Nature more strenuously: And they affect our Spirits with a much more kind and benign Influence, without heating, ruffling, or inflaming them, which Wine and artificial Spirits are apt to do.

Dr. *Rutty* says, Some of the principal Errors committed in the Drinking of these Waters are:

1. Drinking the Water cold, and in too great Quantity in a short Time, few having internal Heat enough to actuate the cold Water, especially those accustomed to the prevailing Fashion of supping warm Liquors, as Tea, Coffee, and Chocolate in a Morning; and this is still worse in phlegmatick, cold, and weakly Constitutions, and in Women during the Menfes, when it is dangerous.

2. Using Food hard of Digestion during the Use of the Waters.

3. Eating too soon, and too much, after drinking the Waters.

4. Too much Use of Tea, Coffee, or Chocolate, which, as warm Liquors counteract the bracing Quality of the cold Water.

5. Too much Use of Wine, which is the Cause of many of the Disorders attending the drinking these Waters.

6. Exercise too violent, particularly to the Degree of raising a Sweat, which hinders the natural Passage of the Waters.

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For a more minute Account of the proper Regimen to be observed during the Use of these Waters, see the following Chapter on the Waters of *Spa*.

Of the Chalybeate WATERS of SPA.

AS these are the most celebrated, and of the greatest Antiquity of all the mineral Waters, and are the only true original *Spa* Water, from which the Name has been abusively transferred to all other mineral Waters, used medicinally, and are universally acknowledged to have a wonderful Efficacy in the Cure of many Disorders, we shall give a minute Account of them.

Spa is a neat Village in the Parish of *Ardena*, in the Bishopric of *Leige*, seated in a Bottom, encompassed on all Sides with Hills, and on the North with steep Mountains.

The Soil is very barren, so that without burning and liming, it would not produce Nourishment for the Inhabitants, and even with these Helps, yields them little but Rye and Oats. However, they are abundantly supplied with all things necessary to the Support of, or that may afford Entertainment or Pleasure to the Invalids, who resort thither, and at a reasonable Price.

As an Argument of the Wholesomeness of the Place, it is observed, that there are scarce any Persons more healthy, or more long-lived, than at *Spa*. In the Neighbourhood are Mines, from whence Sulphur and Vitriol are prepared; and by the acid Vapours whereof these Waters are probably impregnated.

There are many Springs at or near the Town of *Spa*, of which the most noted are the *Pouhon*,
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the *Geronstere*, the *Savinier*, the *Watroz*, and the *Tounelet*. The two first are principally used, and the others very rarely. Many learned Authors differ in their Philosophical Account of these Waters, among whom are *Helmont*, *H. ab Heers*, *Geringus*, *Nessel*, senior and junior, *Dr. Lucas*, &c. *Dr. Rutty* has consulted them all, and they all agree in assigning to these Waters, and especially to the *Pouhon*, the Virtues that *Dr. Slare* attributes to *chalybeate Waters* in general.

The Water of the *Pouhon* Spring is transported into this and many other Kingdoms, and is known, when well corked and secured, to preserve its Virtue for a considerable Time. The *Geronstere* is generally reckoned to be good only upon the Spot, *tho' I have once imported some of that Water at the Desire of an eminent Physician, in great Perfection.*

Dr. Rutty first considers the Appearances, exhibited by the Waters themselves; and next the Parts into which they are spontaneously or artificially resolved. And first, as to the sensible Qualities, the Water of the *Pouhon* Spring is of an acid and vinous, and then of a ferrugineous and vitriolic Taste. The *Geronstere* is of the same Taste; and moreover, at the Fountain-head, has a strong Smell and Flavour of Sulphur, even so great as to resemble rotten Eggs, (and many of those, who drink it, are forced to hold their Noses, whilst drinking) but this is lost by carrying it a little Way from the Fountain, and the *Chalybeate* Taste only retained. It is also observable, that the *Geronstere* Water, though strongly impregnated with Iron and Sulphur, is remarkably cold, so that those, who would deduce the Heat of mineral Waters solely from the Combination of those

beates, I shall, after describing its sensible qualities, and shewing its superior strength, relate the experiments made on it in common, with other chalybeate waters. By the smell, we discover in the well a sulphureous vapour, which makes the water-dippers giddy, and it is from this, that fish, frogs, ducks, &c. when thrown into the well, lose their strength, and at last fall down. It also affects persons who drink the water at the well with a kind of intoxication or drunkenness, and is probably owing to the acid of sulphur, greatly subtilized. This water abounds with air, or an elastic vapour, more than the common acidulæ, and the rising of the bubbles, consequent upon pouring it out into a glass, from a well-corked bottle, has been observed to continue eight hours, when the like bubbles from bottled ale did not continue above four hours. It is of a taste first acid, like wine, pungent and refreshing. It is exquisitely limpid, notwithstanding the large proportion of chalybeate contents it yields. The water is observed to suffer no change as to strength, by wet or dry weather, and is, indeed, the richest of all chalybeates; as appears, 1. By the great quantity of ochreous sediment it yields; 2. By the redder colour of the same; 3. It retains its vitriolic taste, when it has been exposed three days in a wide-mouthed glass, nor does it quite lose it in six days, nor the property of striking purple with galls, with which it strikes a deeper tincture, and retains this property longer than the *German Spa*; 4. It bears a greater heat than common chalybeates; for it tinges a deep purple with galls, when blood-warm, nor does it cease to strike a purple with galls, though weaker, at the degree of scalding hot; nor entirely

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lose this property, when just boiled; 5. It bears carriage better than the *Pouhon* water, and retains its mineral virtues a longer time.

With alcalis and other usual precipitators, the appearances were as follows, viz. oil of tartar, *per deliquium*, precipitates from it a large white-yellowish grumous sediment. The like appearance arises from spirit of sal ammoniac, with a white incrustation upon the sides of the glass. It does not lather, but yields large curds with soap. With lime-water, a small yellowish grumous precipitation is made: with solution of sugar of lead, a brownish white precipitation: with solution of silver in *aqua fortis*, a copper-coloured scum, and a large white-brown grumous sediment: with acids, whether mineral or vegetable, it makes a manifest ebullition; and it is observable, that the ebullition is much greater in the fresh water, than in that which has been exposed to the air; as also that it makes a greater ebullition with acids, than the *German Spa*. If mixed with an equal quantity of milk, it prevents it from turning sour; but when boiled with it, a slight coagulum is produced. With the tincturing articles, the appearances were these; with the austeres, as tea, balauftine flowers, and galls, first a blue, then a purple, and then a black colour: with logwood, blue; with syrup of violets, a deep green; from fena and rhubarb, it drew deeper tinctures, than did either common water, or distilled water.

From one gallon of this water, is obtained about two drams and two scruples residuum. This residuum is of a pale brown, or white and reddish colour; it is of a brackish taste, and nauseously bitter; it does not so soon moisten in the air as
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the residuum of several other waters. It yields about one-third part of salt, which is entirely different from the salt yielded by the *Pouhon Spa*, not only in taste, but other appearances; for though it excites an ebullition, and an acid vapour with oil of vitriol, (though less than the salt of the *Pouhon* water) it makes no ebullition with other acids, which the salt of the *Pouhon* water does; nor does it turn of a deep green, with syrup of violets, as the salt of *Pouhon* water does, but only of a dilute green; and its solution yields white grumes, with oil of tartar, *per deliquium*; and half a dram of it, boiled with half a pint of milk, curdles it strongly.

This salt is evidently a species of the *nitrum calcarium*, and produces a sulphureous acid, which united to the calcarious earth, forms a salt very nearly resembling the *sal catharticum Glauberi*; and hence it is that this water is more aperient than the *German Spa*.

The *Pyrmont* water also contains a subtile sweet alkaline earth, which, as it exceeds the acid in quantity, renders the water more alkaline than acid. For that the earth, separated from the saline parts, is truly calcarious, is evident from its making a strong ebullition with acids, making a weak lime water when calcined, and causing a pungent smell when rubbed with *sal ammoniac*, which the salt does not, herein differing from the salt of the *Pouhon* water; and this may be one reason why the *Pouhon* agrees with some constitutions much better than the *Pyrmont*, and *vice versa*.

There is also another ingredient in this water, which is neither affected by acids, nor like limestone acquires heat by pouring water on it when

calcined, being a transparent, crystalline substance, like the *lapis selenites*, or small mountain crystals.

All physicians agree that this water hath many and excellent virtues. We have observed that it copiously abounds in a strong, penetrating, elastic mineral spirit, which renders it extremely active in opening obstructions, and promoting all the secretions and evacuations of the body. As to its manner of operating, it is both diuretic and cathartic, and frequently sudorific. Hence it is attended with very beneficial effects to those persons whose pores are obstructed, and who perspire with difficulty, as it causes a profuse sweat, and thereby removes many dangerous symptoms. When the humours abound with salt or bile, it commonly causes a breaking out on the skin for a little time. It moves to stool remarkably more than the *Pouhon* water, from the greater proportion of ferrugineous principles it carries. It corrects the saline, bitter, and sharp humours of the stomach and bowels, sweetens the whole mass, tempers the heat of the blood, attenuates and dissolves all obstructions of the lungs, kidneys, and small vessels, and carries off all impurities through the several excretory ducts; and moreover, as it strengthens the tone of the solid parts, it prevents the fresh accumulation of bad humours.

It is of the greatest efficacy in all disorders of the stomach and bowels; in pituitous, flatulent, and bilious cholics; in the worms; in paralytic disorders, convulsions, cramps, scorbutic disorders, chlorosis, obstructed menses, relaxations of the matrix, and barrenness: in disorders of the head, apoplexies, delirium, loss of sleep; in diseases of
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the breast and of the lungs; by sweetening the sharp and saline humours, assuaging the boiling heat of the blood, and strengthening the parts by its contracting, healing, and balsamic virtue: and here it must be noted, that in diseases of the breast it ought to be drank lukewarm, otherwise it may be hurtful. In gouty and scorbutic cases this water mixed with *milk, has been taken with great benefit.

Ordinary bloody fluxes are cured by it in a more safe and sure manner, than by any other method. Its after-effects, like those of the *Bath* water, are confirmed by universal experience, viz. that the greatest benefit is received some weeks or months after drinking it; and there are instances, especially of chronic disorders, where the first or second year, the water made no alteration in the distemper, nevertheless, the third or fourth, the patients were perfectly cured.

Dr. Stare also observes, This water is a proper remedy for most diseases of the stomach, as want of appetite, or defect of digestion, from weakness, or relaxation of the fibres of the stomach; also in canine and excessive appetites, sour and bitter vomitings, heart-burning, or *cardialgia*; for disorders of the bowels proceeding from corrosive or fretting salts, contained in the bilious or other glandulous juices; these are diluted, altered, or sweetened by the chalybeate virtue of this healing water, and the chyle itself is better prepared, and elaborated, in the region of the bowels; and being freed from distempered qualities, is conveyed into the blood, better adapted for sanguification: and in hypochondriac diseases, where pent-up vapours, and flatulent humours, rack and lacerate the tender fibres

* In the *gout*, it is also sometimes advised mixed with the *Bath* water.

fibres and membranes of the stomach and bowels, this salutiferous water is esteemed specifick.

Its virtue is not confined to those parts called the primæ viæ, or first apparatus of the chyle, but extends farther; even penetrates the mass of blood, and is of manifest use to cure the jaundice, and even dropsies (if not too far gone.) It dilutes and washes the scorbutic salts out of the blood, and at the same time washes off the gravel and smaller stones collected in the kidneys, ureters, and bladder, and prevents their concretions in those parts again. The latent seeds of many diseases, fixed in the organic parts, such as the most sagacious physician cannot perceive, are carried off, or obliterated in their origin. Sickly, and squalid countenances, visible indications of a depraved state of health, shall, after a convenient use of this water, look healthful and sanguine; it amends the very texture of the blood, drooping spirits are cheared, exhilarated, and enabled to do the various offices of nature more strenuously: and it affects our spirits with a much more kind and benign influence, without heating, ruffling, or enflaming them, which wine and artificial spirits are apt to do.

Dr. Hoffman observes, that the Pyrmont Water is rather suited to such as are of robust and corpulent habits, than to persons of a tender, and delicate constitution. Yet it may with great safety and advantage be drank by the weak and infirm in a small quantity, or diluted with pure and wholesome spring water, or sometimes warmed by a gentle heat.*

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* This may be done with as little loss as possible of its *mineral spirit* by dipping the bottle corked into a vessel of warm water.

The water-drinkers at the wells generally drink it in pretty large quantities, and find no inconvenience, but good effects from it. It is the common practice to drink it with or without wine, at meals; and sometimes an half-pint glass besides, or more, twice a day, in the morning and afternoon, according as the physician shall prescribe, whose advice it is very necessary for all water-drinkers to take, before they begin their course.

Dr. Ratty says, Some of the principal errors committed in the use of this water, are :

1. Drinking it cold, and in too great quantity, in a short time, as many persons have not internal heat enough to actuate the cold water, especially the female sex, whose frame is more delicate, and who are more accustomed to the prevailing fashion of supping warm liquors, as tea, coffee, and chocolate, in a morning. This is still worse in phlegmatick, cold, and weakly constitutions, and in women during the menses, when it is dangerous.

2. Using food hard of digestion during the use of the water.

3. Eating too soon, and too much, after drinking it.

4. Too much use of tea, coffee, or chocolate, which, as warm liquors, counteract the bracing quality of the cold water.

5. Too much use of wine, which is the cause of many of the disorders attending the drinking this water.

6. Exercise too violent, particularly to the degree of raising a sweat, which hinders the natural passage of the water.

For a more minute account of the proper regimen to be observed during the use of it, see the following chapter on the water of *Spa*.

Of the Chalybeate WATERS of SPA.

THESE are the most celebrated, and of the greatest antiquity of all the mineral waters, being discovered so early as the fourteenth century, and are the only true original *Spa* water, (from which the name has been abusively transferred to other mineral waters, used medicinally) and are universally acknowledged to have a wonderful efficacy in the cure of many disorders.

Spa is a neat village in the parish of *Ardenna*, in the bishopric of *Liege*, about 75 miles distant from *Brussels*, and 21 south-east of *Liege*, seated in a valley, and encompassed on all sides with high hills. The soil is very barren, so that without burning and liming, it would not produce nourishment for the inhabitants, and even with these helps, yields them little but rye and oats. However, they are abundantly supplied with all the necessaries of life; and there are few places of public resort in Europe, which can afford so many agreeable amusements to strangers as *Spa*.

It is observed, as an argument of the wholesomeness of the spot, that there are scarce any persons more healthy, or more long-lived, than at *Spa*. In the neighbourhood are mines, from whence sulphur and vitriol are prepared; and by the acid vapours whereof these waters are probably impregnated.

The principal springs in and about this town are, the *Pouhon*, the *Geronstere*, the *Saveniere*, the *Tonnelet*, the *Groisbeck*, and the *Wartroz*. The *Pouhon* water, of which we shall particularly treat, is the most famous for its medicinal qualities,

ties, and will bear * transportation into foreign countries, preserving its virtues entire.

The *Pouhon* is a flow, deep spring, and is more or less strong and spirituous according to the different state of the atmosphere. It may be looked upon to be in its natural state only in cold and dry weather, when it appears colourless, pellucid, and inodorous, imprints a subacid, ferrugineous taste, with an agreeable smartness. At such time if taken out of the well in a glass, it does not sparkle, but covers the glass on the inside with small air bubbles; but if poured out of one glass into another it sparkles, and discharges a great number of air bubbles at the surface.—In moist and warm weather this water loses its pellucidity, and appears decomposed and turbid.—Hence therefore we may conclude, that in cold and dry weather it is in its greatest perfection, and the contrary when the weather is warm and moist.

Dr. Ratty first considers the appearances exhibited by the water itself, and next, the parts into which it is spontaneously or artificially resolved. The water of the *Pouhon* spring is of an acid and vinous, and then of a ferrugineous and vitriolic taste. Few, says he, if any of our *English*, or even *German* chalybeate waters, that I have examined or read of, have the sprightliness and vinosity of this water; which is also peculiarly remarkable for the quantity of aerial matter it contains, which

* It has been generally thought the *Geronstere* (not being near so strong as the *Pouhon*) loses its virtue when taken to any distance from the spring; but I have known the contrary happen, having once imported some of this water by the desire of an eminent physician, which turned out perfectly good.

is so great, that it boils by mere warmth. The *Pouhon* water was not weakened by the earthquake, which happened in 1692, but is much stronger since than before.

With alcalies, and other usual precipitators, the appearances were, on experiments, as follow: Soap lathers with it, but not without previous curdling. Solution of salt of tartar produced only a thin white cloud, and the volatile alcalies had a like, or scarce so much effect. The solution of silver turns blueish-white, with a small sediment. Solution of sugar of lead turns milky, with a white sediment. Solution of alum exhibited a gross white curd. Lime-water exhibited a yellowish grumous sediment, greater than in *Pyrmont* water. This water contains very little calcarious nitre, or calcarious earth. With acids, it makes a very considerable ebullition, as also with oil of vitriol, spirit of salt, and with spirit of vitriol, and distilled vinegar. Rhenish wine also excites a smok, ebullition, and grateful smell. *Milk mixed with it, either cold, warm, or boiling, suffered no coagulation, but became rather more thin and fluid; *albumen ovi* and *saliva* exhibited some degree of coagulation. With the tincturing articles, the appearances were these: Galls gave it, at or near the fountain, a brown reddish colour, and the tincture of galls, a deep purple; with the tincture of sumach it turned of a purple. The cork in the
flasks

* I have known it make milk agree with some stomachs that could not bear it alone; and on the other hand, I have found milk so soften and moderate the operation of the water, as to render it agreeable and serviceable where it could not otherwise be borne, as in thin, hot, acrid temperaments, and in some hectic cases, where the gastric juice was defective or distempered. LUCAS.

flasks of the *Pouhon* water is always black. Green tea turns it purple. Logwood gave a fine deep blue, which it retained for a day or more. Syrup of violets soon turned a sea-green; which next morning became a deep grass-green. Being exposed to air, it loses its transparency, and becomes whitish. The sediment, in a bottle, was a yellow, reddish, ochre-like matter; it fermented with spirit of vitriol, and lost its redness on being kept two hours on the fire. It made no detonation on the fire with saltpetre, as the sediment of the other waters at *Spa* do, particularly the *Tonnelet* and *Sauvenir*. Being put in a crucible on the fire, it emitted a fume like that of burnt iron, and blackened the decoction of galls. Hence it is concluded, the sulphur it contains is not the common, but a metallic sulphur. Five ounces of this sediment gave 30 grains of a salt, piquant, fat and bitter. The salt made no ebullition with acids, and changed the decoction of galls white.

And here we would obviate an objection which has been started against the acidity of this and the *Pyrmont* waters. We have shewn that acids, both vegetable and mineral, ferment with them: hence it has been concluded they are rather alkaline than acid. But *Dr. Lucas* justly observes, this effervescence is occasioned by the introduction of a grosser acid into the water, whereby its own light and volatile acid is dislodged, and thus the effervescence is raised. The acidity of these waters is further proved by no ebullition following, on the mixture of an acid, after the native volatile acid of the water is evaporated.

Its V I R T U E S.

In order to give a more particular account of the virtues of this water, we shall previously describe some of its most remarkable sensible effects and operations. It is diuretic, sometimes cathartic, and always tinges the stools black, as also the teeth.

It removes habitual costiveness, (proceeding either from an obstruction of the gall bladder, or from an acid discrasia of the blood) and also an habitual laxity of the belly, by strengthening the fibres. It promotes the menses, being the best remedy known in the chlorosis; and yet it does not less powerfully stop their inordinate flux; and though it is diuretic, yet, by the corroborating quality, it is found to be a good remedy in incontinence of urine, and the diabetes. It is suitable to both sexes, and every age, with proper advice, and women with child may drink it safely, but more sparingly than others, from the fourth to the seventh month of their pregnancy. It is cooling, quenching thirst much better than common water; allays inflammations; tempers the heat of the liver; yet it heats where there is too great coldness; dries where moisture abounds; and moistens when dryness prevails: it contracts in relaxations, and opens in contractions; and both cleanses and heals.

It exhilarates and affects our spirits with a much more kind and benign influence, than wine or spirituous liquors. It incides and absterges viscid and tartarous humours, cleanses the blood, strengthens the stomach by its astringency, and corroborates the nerves.

Over

Over the fountain of *Pouhon* are engraven the following lines, expressive of its virtues :

*Obstructum reserat, durum terit, humida siccatur,
Debile fortificat, si tamen Arte bibis.*

It is very observable of this, as well as of the *Pyrmont* water, that their good effects are frequently not found, 'till a considerable time after drinking them.

This water kills worms, frogs, lobsters, and small fishes ; and effectually kills and expels worms, and all sorts of insects in the human body, even by urine.

E X T E R N A L L Y.

It cures diseases of the tonsils from relaxation, by gargling, helps loose teeth and pendulous breasts, ozenæ, and all phagædenic and dyssepulotic ulcers ; injected into the *urethra*, it cicatrizes ulcers, and by its repelling virtue, prevents the regeneration of caruncles there.

It helps the *fluor albus*, not only by drinking, but by injection ; and greatly relieves ulcers of the womb, by its deterging, drying, and cicatrizing quality : it also helps a scirrhus and cancer of the womb, by injection.—It helps the simple gonorrhœa, by drinking, injecting, and bathing ; and fortifies the parts of generation, weakened by gonorrhœas.—It is serviceable in venereal aphthæ, and ulcers in the mouth and tongue, and elsewhere, when the ulcers are hard to dry, (the virus being first taken away) being used by drinking, injection, and fomentation. And lastly, it cures the itch and pustules, by washing, bathing, and drinking.

I N T E R N A L L Y.

Notwithstanding the actual coldness of this water, it is of great use in the cure of catarrhs, partly by drying up, and partly by evacuating the serous humours. In palsies and tremors arising from catarrhs, and in spasms, it is of benefit; and also in megrims and inveterate diseases of the head.

In tough phlegm collected in the lungs it is good, as inciding and absterfive; though forbidden in ulcers of the lungs, lest it should too much irritate. It is said to be a specific in the scurvy; to be very helpful in the leprosy, and in the scabies in the body, or in the neck of the bladder; also in pustules from bile and salt phlegm; in redness of the eyes, by drinking and washing; in red spots in the face, and in red pimply faces, proceeding from hard drinking. It is good also in erysipelas, and in scorbutic hæmorrhages.

It is excellent in many disorders of the *primæ viæ*, as in the diarrhœa, dysentery, and lientery, carrying off the morbid matter, and corroborating the intestines: it is of great service to weak or relaxed stomachs; also in vomitings, obstinate and inveterate; and in sour belchings, cholics, and hickups.

It no where exerts its efficacy more manifestly, than in obstructions of the liver and spleen, and cures the schirrhous of either, if not confirmed; and is restorative in a macies, from an obstruction of the mesenteries and liver.

Many have been cured of the jaundice by this water, which is deemed specific in hypochondriac affections.

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It cures intermitting fevers, tempers the heat of the kidneys, takes away the heat and smarting of the urine, and assuages pains of the kidneys and bladder: it prevents a concretion of sand, and generation of the stone, and deterges and expels sand better than any other remedy; and by continual use, takes away the cause of the stone and gravel.

It cures barrenness in women, arising from too great a moisture and relaxation of the womb. Ulcers in the sphincter of the bladder have been often cured by it; and it is an excellent remedy for a fistula, from an ill-cured abscess in perinæo.

Dr. Lucas says, this water must prove a most powerful remedy in a variety of cases, beyond the reach of artificial preparations. In a languid, depauperated, and broken state of the juices, with a consequent relaxation, and general imbecillity of the solids, the consequences of excesses and debauchery, luxury, softness and inaction, or the effects of a sedentary, studious life, or the attendants of rebellious, chronic, or long and violent, acute diseases; nothing brings so effectual, so speedy a relief, as this spirituous water. In those foulnesses of the first passages, that occasion the engendering of worms of all kinds, with all their long train of ills; in those viscid states of the juices, that cause obstructions of the natural discharges, or of the secretions in the womb, mesentery, spleen, liver, and the pores universally; such as lay foundations for hysteric, and hypochondriac affections, for melancholy, jaundice, scirrhus, calculous concretions in general, gout, rheumatisms, and even for disorders whose seats
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and springs are more remote ; lethargies, epilepsies, apoplexies, palsies, and the long catalogue of nervous disorders that imbitter human life ; in those relaxations that cause unnatural discharges, in the fair sex especially, and imbecillity and sterility in both sexes ; in many cold, sluggish constitutions, attended with asthma and phtisic, arising from a relaxed state of the solids, and an influx of gross, heavy, viscid phlegm upon the lungs and glands about the organs of respiration and speech : in short, in all kinds of obstructions and defluxions, void of inflammation, or tendency thereto.

It has been observed, that many persons with whose constitutions the *Pyrmont* water would not agree, have taken the *Spa* with success ; and *vice versa*.

The Method of Drinking the SPA WATER.

First, as to the season. A serene and dry state of the air is undoubtedly the best ; the water being weaker in rainy weather : and, indeed, it is observable, that it is weaker in cloudy weather, and such as seems inclined to rain, than during the fall of the rain itself. Now, as the summer season is generally the most serene and dry, as well as the most commodious for the exercise to be used in the course ; this is undoubtedly the best time, and chiefly from *May* to *September*. But yet the water may be drank, with very great advantage, in the very midst of winter, and especially in the time of great frost, when it is strongest, even more so than in the hottest weather. But those who drink it in winter, should do so in a warm chamber. Secondly, It is necessary, previous to the use of the water,

water, to cleanse the first passages by a gentle purgative potion, or electuary, as the lenitive, or cassia; and sometimes by a vomit, which the water itself now and then effects, which is not to be discouraged; and sometimes an emetic may be requisite. It has been observed, that the water has disagreed, when previous purging has been neglected, but that after it has agreed well. Thirdly, as to the quantity to be taken, the manner of drinking, and the diet and regimen, to be observed during the course. The only certain measure to be settled, is that quantity which the stomach can bear without heaviness or uneasiness; so that the greater quantity any one drinks, the better, provided the water agrees, and passes off well. It is adviseable, however, to begin with drinking from one glass or two, to three or four; increasing the quantity daily, until one arrives at that measure, which the stomach will transmit; and continue that dose daily, during the course; and to finish, by lessening daily the quantity in the like gradations, with which it was increased in the beginning.

It is sometimes proper to warm the vessel out of which one drinks, with hot water. The whole quantity taken each morning, should be drank within the space of one hour. After finishing each morning's drinking, as above, it will be proper to use exercise for some hours, as by walking, or by riding on horseback, or in a chariot, which is rather better than walking, as it promotes urine rather than sweat, which is more agreeable to the usual course of the water, and manner of its discharge. When the summer is cold and winter-like, drinking it in bed, or by a fire, and applying warm napkins to the stomach, is recommended.

If the water does not pass, but stagnates in the guts, which is known by wind, tension or heaviness in that region, give a clyster of the water, and hiera-picra. If the belly be not naturally soluble, let it be kept so daily. When the water has passed in almost an equal quantity to what has been drank, and the urine from a watery colour is turned to a yellow, then it will be proper to dine; and let the dinner consist of food of easy digestion, as pullets, capons, partridges, pheasants, thrushes, &c. mutton, veal, and (beef of three years old may be allowed) rabbits also, and hares; trouts, pike, gudgeon, &c. But bacon, eels, tench and carp, are forbidden. At dinner, wine, without water, should be drank; and particularly *Moselle*, or other white wine, as favouring the ordinary passage of the water by urine. No water is to be drank after dinner. Water drinkers are also advised to avoid sleeping in the afternoon, to go to their lodgings early, avoiding the night-air, and other occasions of cold; and to banish all grief and inquietude of mind, as a mortal enemy. They are also to sup early and light; on boiled eggs, or broth; or rather not at all, that the stomach may be empty at the time of drinking in the morning; in order to which, they are to rise early, and walk about half an hour before they begin to drink the water, without heating the body; for moderate exercise disposes it to pass off the better.

Fourthly, As to the time of continuing the use of the water; it is commonly extended from twenty to thirty, forty, or fifty days: but a much longer term is necessary, even a whole year, or more; in obstinate and inveterate diseases, great obstructions

obstructions of the viscera, ulcers of the kidneys, the stone, &c.

Lastly; at the end of this course, it is not less necessary to purge than at the beginning: for a more frequent flux of urine has been observed to have attended for some weeks, after leaving the use of the water: and in some persons, abscesses have been formed in several parts, even two months after discontinuing it; and therefore it is adviseable, that the same regimen that was used at *Spa*, should be continued at least for a whole month afterwards.

The extraordinary virtues of this water are so well known, especially to the gentlemen of the Faculty, that it is only necessary to shew, whence it arises, that physicians have been so often disappointed, when this water has been prescribed; by which there will appear neither want of skill in the physician, nor less virtue in the true *Spa* water. That of the *Pouhon* spring is the only one which can bear transportation, or long keeping; so that what we have in *England*, is supposed to be from thence; and, indeed, it ought not to be from any other: since the physicians prescribe the *Spa* water, meaning no other than that of the *Pouhon* spring. Yet it appears from the best calculation, that not more than one third part of the water, imported and sold, under the name of *Spa* water, is filled at the *Pouhon* spring; and this will be confirmed by the following observations.

There is in the country of *Liege*, besides the several chalybeate springs before mentioned, another well, known by the name of *Chevron*, or *Bru*, &c. having very different effects. From this

latter spring great quantities of water are notoriously imported into *England* and other countries. An agent who was sent to *England*, from one of the proprietors of the *Bru*, in order to promote the sale of that water here, declared, that not less than seventy thousand flasks were annually sent hither from that spring, whereof his master was a proprietor.

Dr. Matthew Nessel, physician at *Spa*, in a small *French* treatise on the *Spa* waters, published in the year 1713, thus observes. “ Besides the hindrance
 “ the wars have been to the waters of *Spa*, we endeavour to ruin their reputation ourselves: there
 “ being certain merchants, who are no friends to
 “ their country, and who consult nothing but their
 “ own interest, and how to avoid paying an easy
 “ tax that is laid on the *Spa* waters; (half of
 “ which tax is employed towards repairing the
 “ highways and fountains, one quarter towards
 “ supporting the poor, and the remainder to the
 “ church, and other pious uses, according to the
 “ occasions and occurrences of the times) who, for
 “ the sake of an extraordinary profit, sell the water
 “ of *Chevron* or *Bru*, under the name of *Spa*;
 “ which water having never been in any reputation,
 “ has had no tax laid on it: and yet those
 “ merchants have exacted from strangers the full
 “ price of the true *Spa* water. They have, indeed,
 “ of late, with a view to encrease their own emolument,
 “ and carry on the deceit with greater success,
 “ lowered the price; so that the *Bru* water
 “ is now sold in *England* considerably cheaper than
 “ that of the *Poukon* spring. But I must not forget
 “ to mention, that so gross an imposition has
 “ been attended with very bad consequences, and
 “ has

“ has done irreparable injury to many consti-
“ tutions.”

Dr. Thomas Hobart, in a letter from the *Spa*, to *Dr. Morley*, in *London*, observes, “ that in sending
“ *Spa* water to *England*, as in all other things,
“ there is room for deceit. *London* has been im-
“ posed on some time by the merchants of *Liege*,
“ and made to drink the water of *Bru*, instead of
“ that of *Spa*. I was assured from good authority,
“ that a merchant of *Liege* had, that year, sent
“ forty thousand flasks of it into *England*, and
“ that, in the space of five years, he had sent to
“ the quantity of two hundred thousand flasks.”

He further observes, that this person would have filled them with the true *Spa*, provided the magistrates of the town would have been content with half the customary duty. The mistaken notion, (which has been industriously propagated) that the *Spa* water sparkles much when poured into a glass, has favoured the general abuse of imposing false waters on the public: whereas the true *Spa* water has only a very piquant taste, and, in warm weather, will often occasion a great many bubbles to settle on the sides of the glass; but will not sparkle, when bottled, like the *Bru*, and more vitriolic waters, which are not so well tempered with sulphureous particles, and are therefore not so smooth on the palate, but always leave a disagreeable harshness, instead of that smooth, yet piquant taste of the *Pouhon* water. It is also very probable that the negligence and remissness of persons employed to fill the *Spa* water have given room for a greater vent of the spurious sort; for in order to procure the genuine water of the *Pouhon* spring in its perfection, more than ordinary care
and

and exactness must be used in filling, &c. The usual seasons for this purpose are the months of *March, April, September, and October*: but if I may take the liberty to offer my opinion, I am inclined to believe, from what has been said at the beginning of this chapter, that a course of dry frosty weather is the best season in which the water can be filled. And in this I am the more confirmed, having several times imported a quantity which I had directed to be filled in fine frosty weather, and which proved excellent. The reason why it is not usual to fill during a continued frost, is the difficulty, inconvenience, and additional expence attending it: and besides, as this branch of trade has lain scattered in many hands since the decease of my predecessor, Mr. *Eyre*, no other dealer has thought it worth his while to use the necessary care, and be at the expence of improving the former methods of filling and securing the *Spa* water. These considerations, joined to the encouragement with which I have been favoured, first induced me to take a journey to both the celebrated springs of *Spa* and *Seltzer*, where I have established a respectable correspondence with gentlemen whose care and fidelity are unquestionable; and have caused every material circumstance to be observed which occurred to me, for securing and preserving the medicinal virtues of these waters in the most effectual manner. With this view I have spared neither pains nor expence, and presume to flatter myself that my endeavours have been so far successful, as to discourage, in some measure, the scandalous imposition of *spurious* waters.

Of the SELTZER WATER.

THE fountain of *Seltzer* takes its name from a little village called *Neider*, or *Lower Seltzer*, situated about three leagues from *Francfort* on the *Maine*, in the lower archbishoprick of *Treves*. The country and avenues round about are delightful. This spring rises near a small trout-stream. The water issues with great rapidity, is remarkably clear and light, and on pouring from one vessel to another, gives plenty of bubbles. It is mild and refreshing to the taste, not so pungent and subacid as others, but somewhat lixivious.

The reputation of this water has been of long standing, and it has been held in high estimation by many naturalists and physicians; among whom are TABERNOMONTANUS in his *Thesaurus Aquarum Mineralium*; JOHN WILLIAM MOGE, stipendiary physician to the imperial city of *Worms*; and JOHN DANIEL HORSTIUS. The great HOFFMAN has written a particular treatise upon this subject, in which he informs us that his opinion of the extraordinary virtues of the *Seltzer* water is founded not only upon a careful analysis, but also upon the experience of twenty years, during which time he minutely attended to the various effects of the *Seltzer* water, and prescribed it with the most happy success.

A N A L Y S I S.

The solution of salt of tartar gives it a milky colour, and precipitates a fine pearl-coloured powder. It curdles with soap; and with solution of silver, a gross white cloud, and some curd is precipitated from it.

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If a quantity of this water be exposed to the air for the space of twenty-four hours, there will be no sediment; but the water will lose its taste, and become flat and disagreeable, as though tartar had been dissolved in it; whence it is manifest, that its chief element is of a very subtile and volatile nature.

And this is proved by the experiment of the air-pump; for the circumambient air is no sooner drawn from it, than it rises and bubbles with an elasticity and rapidity beyond what is usual in other mineral waters. Hence it appears to be much lighter, more easy and quick in its operation, than the waters of *Spa*, *Pyrmont*, or any other.

With acids, not only the strong, but even with the weakest, it makes a great ebullition; and with Rhenish wine and sugar it yields a smোক, some hissing, and bubbles in great plenty.

If spirit of vitriol be added to this water, to the point of saturation, and then the mixture be exhaled, it leaves a salt, like the *tartarum vitriolatum*: and if the water be mixed with spirit of nitre, and evaporated to the consistence of chrySTALLIZATION, it is said to afford a *nitrum cubicum*, (an argument of marine salt).—Syrup of violets gives it a green colour. Galls give no tincture to the water; but a blue circle at the surface, and a wheyishness below. Sumach gives it a deep green, especially in the upper part of the mixture; rhubarb gives it an orange colour; and ash-bark a deep blue circle at the surface.

Two pints, exhaled by a mild heat, gave seventy-two grains of a saline matter: on this if oil of vitriol be dropped, a whitish penetrating acid vapour

vapour ascends, like what arises from oil of vitriol and common salts; a second argument of some marine salt: this sediment, however, being dissolved and filtered, yielded two scruples of pure alkaline salt; which is lixivial and brackish. The same salt turned presently of a bright green with syrup of violets, made a great ebullition with vinegar, and rubbed with sal ammoniac, emitted a pungent, volatile spirit: and the solution of mercury sublimate corrosive, added to the solution of this salt, gave an orange-coloured sediment. From all which appearances, the alkaline nature of this salt abundantly appears: yet it differed from several of the native alcalis, in that being rubbed on beef, in solution or substance, it did not redden it.

It has long been imagined, and with great probability, that the vitriolic acid is a principle of the *Seltzer* water. And this opinion has been lately confirmed by *Dr. Monro*, in his *Treatise on Mineral Waters*; as also by *Dr. Brocklesby*, in his *Observations on the Seltzer Water*.

Its V I R T U E S.

From an attentive consideration (says *HOFFMAN*) of the constituent bodies of the *Seltzer* water, we may easily determine that it excels, in several respects, all other mineral waters. For, in the first place, it contains a much greater quantity of pure alkaline salt than the waters of *Schwalback*, *Pyrmont*, or *Spa*, or, indeed, than any other: hence it has the advantage of being more conveniently mixed with milk, so as not to produce the least

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coagulation,

coagulation, and is in that state successfully administered in many disorders. Secondly, It is impregnated with an exquisitely fine and volatile mineral spirit, and is therefore of a very mild operation. For this reason it is prescribed, not only safely, but with the greatest benefit, to persons of both sexes, and of every age; and to such as are of a weak, delicate, or even emaciated constitution.

In general, it tempers and sweetens the whole mass of blood, promoting a brisk and free circulation. It softens, breaks, and disposes to a fluid state, all viscid and gross humours, corrects such as are acid, opens the glands, and puts every part in a condition to perform its natural functions; and by that subtile nature peculiar to it, quickly opens a free and easy passage, operating scarcely ever by stool, but chiefly by urine. Hence it has a virtue more specific in all disorders of the reins and bladder, in the stone and gravel, and in all complaints arising from obstructions of the urinary passages. Of this there cannot be a stronger proof, than that the inhabitants of *Seltzer*, and in the district round about, who not only use this water for a medicine, but make it their common liquor, are observed to be scarcely ever afflicted with those disorders, and are less subject to the gout, rheumatism, and scurvy, than other people.*

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* In the neighbourhood of *Seltzer*, and in many other parts of *Germany*, this water mixed with Rhenish wine, and sweetened with a little sugar, is the common beverage. And *Linden* advises it in this manner, to be drank at meals, to those who are afflicted with any of the above-mentioned disorders, except they are much used to malt liquors; in that case he recommends drinking the water alone, first lukewarm, little at a time and often, 'till the stomach is habituated thereto.

There is not a more present and certain remedy than the *Selteran* water, mixed with asses or goats milk, in diluting crude humours, tempering and correcting the discrasy of the blood, and humours in the gout : and in the heart-burn, attended with viscous humours in the stomach, this water taken to a quart in the morning, and a pint in the evening, is an excellent medicine. It hath been of great service in an anasarca ; and in malignant putrid fevers, mixed with lemon juice, it hath been used to very good purpose, as a common drink.

The *Seltzer* water, mixed with asses milk, (or without, if more agreeable to the constitution) nowhere exerts its restorative virtues with greater efficacy than in consumptive cases, and in all disorders of the lungs, whether obstructed, or loaded with acid humours : in dry coughs, difficulty of breathing, tumors in the lungs, spitting of blood, accompanied with inward intermitting heats.* It eases and removes arthritic and rheumatic pains, and is an excellent remedy in scorbutic cases, as well as in cutaneous diseases ; and, as they mostly proceed from obstructions caused by acid and salt humours, those dissolving and penetrating qualities, which are every where acknowledged to be in these waters, must needs be useful to soften, break, and discharge the same. Upon this account the *Seltzer* water is very beneficial to nurses, whose

* *Linden* says, the *Seltzer* water should not be taken when the lungs are ulcerated ; and advises those consumptive people who chuse to drink it with wine, to mix it with the rich and nourishing ones, as the Cyprus, Canary, or Mountain, and not with Rhenish, or any sharp wine.

milk is thick or impure, and who are subject to scorbutic disorders. A pint of this water taken every day, will render their milk wholesome and nourishing to infants, and prevent it from souring, or coagulating in their tender stomachs, and thereby preserve them from the gripes, looseness, and convulsions, the frequent consequences of a sour, and coagulated milk.

This water is a noble medicine in all disorders of the nervous system, being excellently adapted for composing spasmodic or convulsive affections. In these cases it may be taken simply, or mixed with asses or goats milk, as best agrees with the constitution of the patient. It is a specific in heartburns, cholics, violent vomitings; also in the diarrhoea, and dysentery.

The salutary virtues of this water are not less visible in hypochondriac and hysterical passions, by effecting a timely cure, and thereby preventing the fatal consequences of those maladies. It is taken with great benefit in cases where the brain is distempered, occasioned either by saline and sharp salts, or by extreme weakness, proceeding from a laborious and intense application of the mind; and therefore is recommended as a most salutary liquor, to studious and sedentary persons. Being of so light a nature, that it accelerates digestion, and produces a perfect chyle, it may be drank to advantage all the year round at meals, &c. But those persons, with whose stomachs water alone may not so well agree, are advised to mix it with a third or equal quantity of good old Moselle wine, or Burgundy, or any other agreeable wine,
and

and to add thereto a little sugar or cinnamon, which will render it a very pleasant, as well as cordial and wholesome drink.

Dr. Hoffman further observes, that the *Seltzer* water promotes and facilitates the evacuation of the menses, and that it agrees very well with pregnant women; but advises them to drink it sparingly, and mixed with wine at their meals, or to take a moderate glass of it every morning and evening.

He also assures us, that it is of great service in the atrophy, as well as in venereal diseases, and that he has found it to be very beneficial in more or less violent gonorrhœas. Of this we have a remarkable instance in the 10th Tome, and 85th Observation of the *Acta Academiae Cæsareæ*, where we are informed of an atrophy and hectic, from the venereal disease, which, after the mercurial salivation, guaiacum, and sarfa decoction had been used in vain, was cured by drinking two parts of *Seltzer* water, and one of goats milk warm, in the morning a-bed, from half a pint, gradually increased to a pint and half, for six weeks; whereupon the thirst, heat, and colliquative sweats, vanished, and a compleat recovery ensued: and a second instance is given of a person in the like circumstances, who, after a salivation, fell into an atrophy with colliquative sweats, and was cured by drinking the *Seltzer* water and goats milk, in the same proportion, for ten weeks: and though she suffered some little relapse and menaces of the atrophy returning about the vernal equinox, by repeating the same method yearly for three months, she was entirely restored.

Linden,

Linden, in his Observations upon the *Seltzer* Water, concludes thus: In obstructions and suppressions of the menses, where it is necessary to destroy the viscosity or lentor of the blood, or lessen its quantity, this water, used with proper evacuations, as bleeding or cupping, is an excellent remedy. But in these cases it ought not to be taken without exercise. Therefore such ladies as are afflicted with those disorders, ought to drink it in the summer, five or six wine glasses full in the morning, not at once, but by intermission, and use exercise with it, as much as their constitutions can bear. And if the same method be observed in the afternoon, a short continuance will produce the deobstruction of the occluded canals. And those ladies who indulge themselves in too much rest and inactivity, would find great benefit by undergoing every spring a course of the *Seltzer* water.

When the fibres are dried, and the nerves and springs of the human machine contracted and shrivelled up, more effectual relief will be had from the *Seltzer* water than from any thing known in the *materia medica*. And in great obstructions, where the viscous cohesion of the particles forms such masses as cannot pervade their proper vessels of circulation, if they are not grown too concrete or fixed, and are in the least capable of attenuation and dissolution, this water will be a great assistant, will open the passages, and cause a fresh vital stream to flow through them. Likewise, in those obstructions, which are occasioned by general or particular tumours, or fulness of the glands; in these circumstances, if any thing can be expected from a medicine, it may with the greatest safety from the *Seltzer* water.

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These distempers being such as are most incident to the inhabitants of large and populous cities, and are in great measure occasioned by a thick and heavy atmosphere; a course of the *Seltzer* water, for a few weeks, taken at some distance from town, would be an excellent preservative to those persons, and be the means of prolonging their lives, whose business requires a constant attendance in the city of *London*.

In such hystERIC passions as are owing to the obstruction of the menses, or an impurity of the blood or juices, and in the *fluor albus*, the *Seltzer* water, mixed with an equal quantity of the *Pouhon Spa*, is an excellent remedy.—The like mixture has been found of great service in obstructions of the liver, and in acute pains, arising from a *schirrus*. But in these cases the mixture must be drank more plentifully than the water by itself.

Dr. Shaw remarks, that this water being of a peculiar nature, deserves to have its virtues and uses more generally known. There is no water of the same kind hitherto found in *England*, nor even a substitute for it. It is suited to all hectic and feverish complaints, agreeing very well with the stomach, and not cooling too violently. It appears remarkably serviceable in most inflammatory cases, the hot scurvy, and in all tendencies to a consumption from enflamed or feeble lungs, and abates the heat occasioned by matter breeding, or bred in any part of the body.

We cannot dismiss this subject without referring the inquisitive reader to *Dr. Brocklesby's* very judicious

cious experiments and observations on the *Seltzer* water,* together with several interesting cases, in the fourth volume of *Medical Observations and Inquiries*. As the limits of this treatise will not permit us to add those cases at length, and as an abstract of them would convey but an imperfect information, we must be content with acquainting our readers where they will meet with the fullest satisfaction.

It is obvious, from what has been said of the alkalious nature, and fine volatile principle of the *Seltzer* water, that it is more liable to putrify than any other mineral water. But though I am convinced it is impossible to preclude this defect entirely, yet it may in great measure be prevented by a judicious management. For which reason I am particularly attentive in my importation of this water, to use such precautions as will most effectually retain its spirit and medicinal virtues.

Dr. Hoffman observed long ago, that quantities of this water are frequently stowed in a loose manner, and exposed to the heat and rain, in open boats, in order to be conveyed down the *Rhine* to *Cologne*, in the way to *Holland*, from whence they are transported to *England*, and other countries.

It

* The following caution which *Dr. Brocklesby* has given, we think of too much importance to be omitted, as it tends to detect an imposition of which few persons, who may have occasion to drink the *Seltzer* water, may be apprised, and as it proves the care necessary to be taken, in order to be certain of having *this*, as well as the other mineral waters, *genuine*.

The Doctor says, “ I have seen a salt offered to sale in
“ *London* for the salts of *Seltzer* water, which the venders
“ would wish to impose on the credulous public as the con-
“ centrated virtue of this mineral water, but which falls infi-
“ nitely short of the water itself.”

It is no wonder therefore, that water, of which so little care is taken, entirely loses its virtue, long before it arrives at any considerable distance from the spring. That the water which I import might not be subject to so prejudicial a negligence, I have directed that every can sent to me be well stopped with good corks, and well rosined over, and afterwards closely packed with straw, not in baskets, as they are commonly sent to *Holland*, but in strong chests. And according to this method I receive the *Seltzer* water at the most proper seasons, immediately from the comptroller of the fountain to his Electoral Highness. But I think it is a duty I owe to the gentlemen of the Faculty, and the Public, to mention, that the alkalious nature and very subtile principle of this water will often baffle the utmost care, as a bottle will now and then be found to have lost its spirit, even perhaps one or two in a dozen (though it must be observed, that this frequently happens to the choicest wines, of a much stronger body than the *Seltzer* water). But I flatter myself that its virtues, which I have used all possible means to secure in my importation of it, will abundantly compensate this casual inconveniency, which indeed attends all mineral waters, but the *Seltzer* in particular.

It being of the greatest importance to those, who are advised to use a course of *mineral waters*, for the benefit of their health, to know that they have them GENUINE, as well as of the best importation: it is deemed an indispensable caution, upon concluding this treatise, to remark, that the public are not only subject to be imposed upon, by the vending of stale waters, which have en-

tirely lost their *medicinal virtue*, but also by a practice of a more pernicious tendency, which is, the IMITATION OF MINERAL WATERS BY ART;* a practice too often adopted by many interested persons, who, regardless of any thing but gain, scruple not to substitute their own artificial preparations in the room of the GENUINE waters. That the foreign waters are thus imitable, by means of chemical ingredients, is the undoubted opinion of many eminent physicians, to name only *Hoffman*, *Dr. Peter Shaw*, and *Dr. Rutty*.
Dr. Shaw

* Art is capable of bringing about very perfect solutions of the solid ingredients, and diluting them to any pitch with pure water. And yet can they not be found to answer any of the purposes of the perfect natural water. It only serves to shew the extreme disparity between the operations of nature and those of art. And hence all attempts hitherto made to counterfeit these waters have been grossly ridiculous. *LUCAS*.

A new invention has lately been made public to imitate that rich chalybeate water, the *Pyrmont*, (as well as the *Spa*) by means of an *apparatus* contrived for impregnating *common water* with *fixed air*: a method which may be very well adapted for the exercise of ingenuity; but how far it may answer any medicinal and salutary purpose, cannot remain long a doubt.—Another method is likewise practised by some dealers, not indeed so ingenious as the former, but not less gainful. This is by the mixture of *Pyrmont* water with common water; so that one bottle of the *genuine Pyrmont*, after passing through such frugal hands, may be increased to two bottles.—Such are the impositions by which the public are liable to be deceived in respect to the *foreign waters*, and which it was presumed of greater importance to point out, because many persons would scarcely suspect any such fraud in the article of *water*.—Hence we may also account for the disrepute which has sometimes attended the *Pyrmont* water, &c. occasioned by the sale of the counterfeit sort, which being imposed upon persons totally unacquainted with the nature of the *genuine*, they have (from the inefficacy or bad effects of such spurious water) been discouraged from making any further trial of the mineral waters.

Dr. Shaw expressly observes, “ There are reasons to apprehend, that either this expedient, or a worse, is practised at *London*, and elsewhere, so as to imitate the *Spa*, the *Pyrmont*, and other *foreign Waters*, in such a manner as to pass undiscovered upon ordinary judges.” Hence it is easy to account for the great quantities of *spurious* waters, which are sold at a *low price*, for the *genuine* waters; and for the bad effects which are the frequent consequences of so base an imposition, which are the more dangerous, as they are not so easily detected.

I take this opportunity to return my most respectful thanks to the Nobility, Gentry, and Faculty, who have been pleased to honour me with their encouragement; and beg leave to assure them, I shall spare no pains nor expence, in my importation of the FOREIGN MINERAL WATERS, to merit their future approbation and commands, which shall be always faithfully and punctually executed by their obliged, and

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